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Division of Regulatory Services FY95 Annual Report

MASSACHUSETTS DEPARTMENT OF FOOD AND AGRICULTURE

Executive Office of Environmental Affairs

Jonathan L. Healy
Commissioner

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Overview and Summary

Another year has flown by and all of us in the Division of Regulatory Services are anxious to update interested parties on our FY95 activities. It was a busy year with many adjustments as well as accomplishments within each Bureau in the Division. Each Bureau has compiled its individual annual report with all of the details which are included in this packet. As Director of the Division, my report will overview our direction and highlight some key changes and accomplishments in FY95.

Throughout the year all Bureaus within the Division have continued their strong efforts to treat our customers in a fair and sensitive manner with accurate information and good common sense being used in all situations. To assist us in reaching these guidelines many staff members in the Division have attended training courses and seminars in the past year to expand their individual performance ability and thereby add to the total efforts of the division.

The Goals of The Division are to:

1. Carry out the requirements of the statutes and regulations which we operate under in a fashion that gets the job done and allows business to prosper.

2. Develop updated or new regulations when needed or desired by the industry and to initiate new legislation whenever it would assist the particular industry in question.

3. Treat all of our customers as well as all staff members in a respectful and dignified manner.

4. Continue to upgrade our knowledge and capability so that we may react swiftly whenever the need arises in our fast changing world.

5. Educate our customers so that they are fully aware of DFA regulatory activities and assistance available in their area of agriculture and or service to the citizens of Massachusetts.

Bureau of Farm Products and Plant Industries

After a through review of the Bureau of Farm Products and the Bureau of Plant Industries it was determined that it would be advantageous to merge the Bureaus. This was accomplished on June 1, 1995. The merged Bureau, headed up by George Porter, covers all regulatory aspects of the feed, fertilizer, lime, farm products, apiary, nursery and greenhouse industries.

1. In the past fiscal year we were fortunate to completely update the Apiary Regulations and they are now officially in place.

2. The Nursery-Greenhouse regulations are in the review process and we hope to have their update completed in FY96.

3. The apiary inspection program managed by Al Carl and the nursery-greenhouse inspection program managed by Phyllis Michalewich carried out all of their required duties in a fine fashion with the assistance of the seasonal inspection staff. It continues to be very cost effective for the Department to use seasonal inspectors for these programs rather than keeping a larger year round staff.

4. A major change occurred in the Bureau concerning the feed and fertilizer sample analysis program. It was determined early in the year that although we would like to, we would be unable to continue with the University of Massachusetts West Experiment station as the laboratory to analyze the samples due to the high costs involved. The Department elected to contract out the work and solicit bids. The successful bidder was the New Jersey Feed Testing Laboratory located in Trenton, N.J. This action resulted in a considerable cost savings to the Department. The sample analysis and reporting process worked out fine with a greatly improved timeliness of results reported to the Bureau.

5. The Bureau in its diligence to properly register all feed products has again increased its total registration of these products and the income stream to the Department has risen accordingly.

The demand for the services of the Bureaus inspection staff continued to escalate during the growing season. It is great to see the strong interest and super attitude on the part of all staff persons in the Bureau to take on this additional work. In addition to the routine work of the Bureau they assisted in preparing the Department's exhibit at the Boston Flower Show in March and they have taken on the Department's maple syrup sampling and producer education efforts.

Pesticide Bureau

The Pesticide Bureau's activities cover many areas which are detailed in their report. The Bureau had a successful year, chock full of many adjustments.

1. The number of product registrations and the number of applicators licensed in FY95 exceeded the previous fiscal year.

2. A total of twenty-six exams were held compared with fifteen the previous year. The increase in exams being offered worked out fine for all applicants and the resultant elimination of complaints to our office of not holding sufficient exams gave us a good feeling about the extra effort required.

3. Iliana Rivas was named the Department's IPM coordinator early in FY95. Iliana is doing a fine job of pulling the Department's IPM efforts from "Partners With Nature" to "Urban IPM" together so that the Department has a unified, aggressive IPM approach.

Iliana and her IPM team put together a nice IPM exhibit for the Massachusetts building at the Eastern States Exposition in the Fall of 1994. The Department has held field IPM media events

to attract interest to the IPM concept. The Partners With Nature program went from twenty-five participants in the summer of 1994 to thirty-four participants in the summer of 1995 a thirty-six percent increase. The Department's IPM Interdepartmental Service Agreement (ISA) with the University of Massachusetts was set at a support level of $250,000.00 for their continuing IPM projects. The Department kept $12,500.00 of the $262,500.00 allotted by the legislature for the Department's IPM efforts in FY95 and used these funds in the Agricultural Development section of the Department.

4. The grants from the U.S. Environmental Protection Agency continued for FY95 and were a great assistance in keeping the Bureau's programs in good fiscal standing.

5. The enforcement section of the Bureau had a great year. They were successful in winning the Terminix case and garnering a substantial judgement via the mediation process. The Rights-of- Way Program continued to expand quite rapidly with additional utilities and highways added to the program. In addition, the enforcement section did a great job of assisting with the Department's exhibit at the Boston Flower Show in March. The extra hands made the project much easier to complete for everyone involved.

6. A large amount of the enforcement grant funding is used to fund the Pesticide Laboratory at the University of Massachusetts in Amherst, MA. The Department contracts with this laboratory each year to carry out its pesticide analytical work.

7. FY95 brought some personnel adjustments to the Bureau with the largest one being the resignation of Gail Kaprielian, the Bureau Chief. Gail tendered her resignation which was accepted by the Commissioner to become effective May 5th. We were sorry to see Gail leave however, we do wish her well in her new career path.

8. After following all proper procedures to obtain a new Bureau Chief we are pleased to report that Brad Mitchell was appointed to the Pesticide Bureau Chiefs position in August. We wish Brad great success as Chief of the Pesticide Bureau.

All staff members in the pesticide Bureau have jumped through many hurdles during the past year and I want to express my sincere appreciation for their fine continuing dedication to accomplish the tasks at hand in a helpful, friendly and supportive manner.

Bureau of Animal Health

The Bureau of Animal Health is one of the oldest Bureaus in the Department. The work that the Bureau accomplishes is very important to maintaining a domestic livestock and poultry industry that is disease free and able to meet the import requirements of other states and countries. In addition to domestic livestock and poultry, the Bureau also administers the pet shop program.

1. We are pleased to report that under the leadership of Bureau Chief, Dr. Peter McArdle the pet shop regulations were completely updated in the past year. They have been fully promulgated and are now in full force and effect. It is hoped that with the updated regulations the Department will be able to improve their guidance to all pet shop owners in the proper handling of pets and the preparation of these pets for the eventual buyer. There are presently over 250 pet shops licensed in Massachusetts.

2. In addition to the pet shop regulations the Department updated its rabies regulations in the past year and the updated version became fully effective in October of 1994. Rabies (raccoon strain) has continued throughout FY95. There are now over 300 of the towns in the Commonwealth identified as having two or more animals positive for rabies at the Department of Public Health Rabies Diagnostic Laboratory in Jamaica Plain. There has been over 1,700 animals (greatest percentage raccoons) identified positive for rabies at the laboratory since the epizootic started in September of 1992. Mike Cahill is the Department's full-time rabies program coordinator and Mike does a great job of keeping on top of all issues coming before DFA involving rabies.

3. The Department renewed its contract with the University of Massachusetts in Amherst, MA to do the diagnostic work for the Bureau of Animal Health and the Division of Dairy Services.

4. The poultry section of the Bureau is working on updating the poultry regulations and hope to complete this project in FY96.

5. The Bureau is well underway in the area of swine pseudorabies to elevate Massachusetts from stage three to stage four in the eyes of USDA. The ultimate goal is stage five which is pseudorabies-free. We will continue to work hard to reach stage five which will greatly assist our swine breeders in their efforts to market Massachusetts swine from a pseudorabies free state.

All staff members have done a fine job over the past year to accomplish the mandates which the Bureau works under. All activities have been carried out in a friendly, helpful and supportive manner.

Conclusion

This report outlines several of our accomplishments in each Bureau. It is our continual goal to accomplish our tasks with the least upset to the customer. At the same time we want to leave the customer feeling that he or she has been helped and would happily contact DFA again for further assistance.

As public servants it our constant aim to serve and serve well. As Director of the Division I wish to convey my personal thanks to all staff members in the Division and the many DFA staff members outside the Division who have assisted us for all of their extra efforts over the past year. We are fortunate in having a Commissioner who is strongly interested in furthering the goals of DFA and I sincerely thank Jay Healy for his support and guidance throughout FY95. It must be remembered that working together we are a team able to pull the load. Let's continue the enthused team approach which I feel is growing at DFA.

Respectfully submitted,
David L. Sheldon, Director

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Bureau of Farm Products and Plant Industries

The Bureau of Farm Products underwent a major change this year by joining forces with the Bureau of Plant Industries. The Bureau is now called the Bureau of Farm Products and Plant Industries. This positive move enables us to operate in a more effecient and professional manner. The transition of the two Bureaus has gone very smoothly. The new Bureaus' staff consist of the following personnel:

George M. Porter ----- Chief
Phyllis Michalewich -- Marketing and Product Utilization Specialist III
Alfred Carl ---------- Program Cordinator I
Robert Rondeau ------ Marketing and Product Utilization Specialist III
Ellen Rivest ---------- Marketing and Product Utilization Specialist I
Howard Vinton -------- Marketing and Product Utilization Specialist I

Another major change in the Bureau of Farm Products is the privatization of the feed and fertilizer sample analysis program. Contracting out the testing of feed and fertilizer to the successful bidder, the New Jersey Feed Laboratory, Inc. located in Trenton, New Jersey, proved to be a substanial savings to the Department. The Bureau of Farm Products also administers a diversified quality-control program for farm products, including the Federal-State Fruit and Vegetable Shipping Point Inspection Service. It also enforces Truth-in-Labeling Laws for commercial animal feed, pet food, seed, fertilizer and limestone; regulates certain produce branding, labeling and storage laws; and collects more than $365,000 annually in product registration and inspection fees. Over 93 samples of maple syrup were taken and tested by the Department of Public Health's Division of Food & Drug for lead content. In addition, the Bureau publishes a weekly wholesale Apple Report listing market prices and storage holding information.

Plant Industries administers the inspection program of nurseries and greenhouses. Inspections are made annually, certifing the nurseries. An agents' license is issued to those who buy and sell nursery stock. State and Federal Phytosanitary certificates are also issued for shipment of plants to others states and foreign countries. Apairy inspections are made annually on bee hives for control of diseases and insects. Plant Industries collects more than $34,000 through inspection fees and licenses.

The Bureau of Farm Products field staff is now fully trained and licensed by the U.S. Department of Agriculture which allows them to perform effectively and issue Federal Certificates attesting to the quality, condition and grade of Massachusetts produce shipments. In addition, the inspectors analyze and test controlled-atmosphere apple storage rooms, sample feed, pet food, fertilizer and lime products for testing at the New Jersey Feed Labortary, Inc. They also inspect and regulate produce at wholesale markets, retail stores and farm stands for conformance to certain labeling and branding laws; keep accurate records of such transactions; and perform other related duties as required by the Bureau.

Fruit & Vegetable Inspection

Demand for our inspection services was weighted heavily toward exporting apples, primarily those shipped to the United Kingdom and Canada. Apples were also inspected for shipment to California where demand has been increasing. In total, more than 122,967 bushels of Massachusetts apples carried federal-state inspection certificates for export. Vegetable inspection at the Pioneer Valley Growers Association (P.V.G.A.) continues to increase steadily in South Deerfield, MA plus vegetable inspections at the Coastal Growers Association in Westport, MA. The increased inspections at these two locations has proven to be very helpful to the farmer, shipper and buyer.

The export apple inspections are of major importance, primarily because of the demand for controlled-atmosphere stored apples, including our valuable McIntosh variety and quality packs. McIntosh apples cannot be grown successfully in European countries. The controlled atmosphere method of storing apples greatly lengthens the marketing season, allowing shipment of apples in good condition well into June.

Feed Program

Over 4,799 labels of animal feed, pet food and medicated feed ingredients were reviewed and registered during the year. A total of 339 samples of feed and pet food products being offered for sale in Massachusetts were taken and tested at the New Jersey Feed Laboratory, Inc.

Fertilizer Program

A total of 1,720 labels of fertilizer products were reviewed and registered for the year. A total of 395 samples of fertilizer products being offered for sale in Massachusetts were taken and tested at the New Jersey Feed Laboratory Inc. Assessment penalties in shortage of guarantee levels were levied, with fines collected and turned back to the farmers or submitted to the state treasury. Tonnage taxes were assessed and collected on a semi-annual basis.

Lime Program

A total of 60 limestone labels were reviewed and registered during the year. Samples of lime products were taken and tested at the New Jersey Feed Laboratory, Inc. for conformance.

Seed Program

Bureau inspectors did not sample any turf seed, crop seed, vegetable seed, lawn mixtures, flower seeds, shrub seeds, tree seeds, etc., for truth in labeling this year. However, the

inspectors did enforce the Massachusetts Seed Law and issued "Stop Sale Order" on any seed that did not comply with the Massachusetts Seed Law.

Branding Law

Inspections were made at retail stores, wholesale markets and roadside stands to enforce the branding laws on apples and potatoes. Misbranded products were relabled or removed from sale by issuing a "Stop Sale Order". Stop Sale Orders were issued on 57 lots of apples covering 326 bags of apples and 57 lots of potatoes covering 807 bags of potatoes. The "Native Law" was also enforced by the inspectors.

Storage Laws

Records are kept on cold storages and controlled-atmosphere (C.A.) apple rooms to assure compliance with storage laws, thereby allowing Massachusetts apples to be shipped into district markets year round. Over 25 fruit growers in Massachusetts now have controlled atmosphere rooms which are registered annually. Over 75 C.A. rooms are certified and inspected three times during the storage season. Two new controlled atmosphere storages were build during the last two years.

Maple Syrup

During FY 95 the Bureau of Farm Products and Plant Industries sampled more than 93 maple syrup products from Massachusetts producers for testing of lead content in cooperation with the Department of Public Health's Division of Food & Drug. Of the 93 maple syrup samples, thirty-six producers were re-sampled and of the thirty six samples, six again were re-sampled for lead content. We received fine cooperation from the Massachusetts maple syrup producers. A substantial number of the maple syrup producers are under way in replacing and up-grading their equipment. This effort has proven to be very effective in reducing the level of lead in syrup. We expect the sampling and testing program to continue in the spring of 1996 to insure that all producers meet the recommended guidelines to limit the level of lead in maple syrup.

CONCLUSION

The Bureau of Farm Products and Plant Industries through strict adherence to laws, regulations, grades, label reviews and other essential data, has done much to up-grade the quality and condition of farm products, apiaries, nursery stock and greenhouse plants being offered for sale in Massachusetts. These programs reflect the general crop conditions and market situations of the farm products, nursery stock and greenhouse plants. The uniform laws and grades allow these products to move in interstate and export commerce. Working with other states, the USDA, the Food and Drug Administration and other various regulated industries, the Bureau of Farm Products and Plant Industries and the Department of Food and Agriculture have helped foster the marketing of high-quality farm products, nursery stock and greenhouse plants.

I wish to extend my sincere thanks to all of the staff members in the Bureau for their great work ethics and extra efforts throughout the year. In addition, the Bureau is very appreciative of the support of all the other staff members of the Department of Food and Agriculture that work closely with us throughout the year.

FEED, FERTILIZER and LIME REGISTRATION RECEIPTS FOR CALENDAR YEAR

	1990	1991	1992	1993	1994	1995
Feed/a	3,223	3,497	3,756	4,271	4,549	4,799
Fertilizer/b	1,229	1,242	1,507	1,645	1,769	1,720
Fertilizer/c	22	23	30	26	26	22
Lime/d	44	47	48	50	65	60

/a Feed Brands
/b Specialty Fertilizer Brands
/c Commercial Fertilizer Licenses
/d Lime Brands

FEED, FERTILIZER and LIME RECEIPTS FOR CALENDAR YEAR

	1990	1991	1992	1993	1994	1995
Feed/a	$80,575.00	$174,825.00	$187,800.00	$213,550.00	$227,450.00	$239,950.00
Fertilizer/b	30,725.00	62,100.00	75,350.00	82,250.00	88,450.00	86,000.00
Fertilizer/c	2,750.00	2,875.00	3,750.00	3,250.00	3,250.00	2,750.00
Lime/d	2,200.00	2,350.00	2,400.00	2,500.00	3,250.00	3,000.00
Tonnage/e	11,893.56	10,685.30	13,905.39	14,002.14	13,528.68	14,858.94
Penalties/f	8,325.62	----------	18,987.79	12,270.14	7,506.56	1,182.45

/a Feed brands
/b Specialty brands
/c Commercial plants
/d Lime brands
/e Fertilizer tonnage fees
/f Fertilizer penalties

FRUIT and VEGETABLE INSPECTION REDEIPTS FOR CALENDAR YEAR

	1990	1991	1992	1993	1994	1995
Apples	$16,896.82	$9,592.00	$10,919.14	$7,795.78	$5,745.64	$9,098.31
Cranberries	280.00	280.00	560.00	280.00	---------	---------
P.V.G.A.	---------	---------	200.00	515.00	890.00	825.00
C.G.A.	---------	---------	---------	---------	570.00	460.00
TOTAL	$17,176.82	$9,872.00	$11,679.14	$8,590.78	$7,205.64	$10,383.31

P.V.G.A. (Pioneer Valley Growers Association)

C.G.A. (Coastal Growers Association)

APPLES EXPORTED

From Massachusetts to E.E.C. and Canada

YEAR	CARTONS	VALUE
1986	113,896	$ 1,366,752
1987	91,375	$ 1,096.500
1988	126,593	$ 1,519,116
1989	236,559	$ 2,838,708
1990	226,354	$ 2,716,248
1991	127,693	$ 1,532,316
1992	145,402	$ 1,744,824
1993	102,847	$ 1,234,164
1994	72,545	$ 870,540
1995	122,967	$ 1,708,000

Plant Industries

The Plant Industries section of the Bureau is authorized to assist, quide and conduct inspections of Massachusetts nurseries and apiaries in accordance with Chapter 128, Sections 16 - 36A of the Massachusetts General Laws and the regulations developed thereunder.

The Department of Food & Agriculture has given our Bureau a name change. Effective June 1, 1995, this Bureau has merged with the Bureau of Farm Products, which is under the direction of Bureau Chief, George Porter and is now known and referred to as The Bureau of Farm Products & Plant Industries.

The Plant Industry duties of this Division are still divided between Phyllis Michalewich, Product & Utilization Specialist, who concentrates her efforts on the nursery inspection, certification and the licensing program of nurseries and agents, and Alfred Carl, Apiary Program Coordinator, who concentrates his efforts on the apiary inspection program. The Farm Products area has 3 Product & Utilization Specialists to cover apple, vegetable, fertilizer and feed inspections throughout the Commonwealth.

Nursery Inspection

The annual inspection of nurseries was completed in the second week of September, 1994. Five inspectors and one foreman were employed for this work starting on July 1, 1994. The Bureau of Plant Industries' inspection certificates expire on June 30 of each year. New nurseries are inspected subsequent to July 1, as they become known. The summer inspection crew consists of temporary personnel usually recruited from the local colleges. Applicants must have had courses in entomology, plant pathology, horticulture, and/or related subjects.

While no unusual infestation of plant pests were found in the nurseries, the following insects and diseases were detected during the summer inspection period: Aphids, Japanese Beetle, White Pine Weevil, Spruce Gall, Black Vine Weevil, Pine Tip Borer, Gypsy Moth, Leaf Gall, Leaf spot and Powdery Mildew. Dogwood Anthracnose was very prevalent on Cornus florida (native dogwood) but was not detected on Cornus kousa (korean dogwood), a more resistant variety. Most nurseries were found to have heat stress along with some winter injury due to the lack of snow fall this past winter. It should be noted that due to organic, IPM and chemical pest controls, pest problems in the nurseries are being kept to a minimum.

On June 1, 1995 our FY96 inspection began. Changes were made for annual inspections to cover more extensive inspections throughout the Commonwealth.

The chart below describes the fee system imposed in accordance with the inspection of nurseries and greenhouses, and registration of agents:

NURSERIES

less than one acre in stock	$10.00
1 - 5 acres	$30.00
6 - 25 acres	$40.00
26 - 100 acres	$50.00
Over 100 acres	$70.00
Greenhouse (not in nursery)	$30.00
Agent's	$30.00
Houseplant inspections	$10.00

only to states requiring such inspections

	INSPECTIONS	LICENSES ISSUED	RECEIPTS
Nurseries	578	239	$ 6,020.00
Greenhouses	87	38	$ 1,140.00
Agent's	462	897	$ 26,910.00
Houseplant	21	21	$ 210.00
State Phytosanitary	92	92	
Tree/Shrub Seeds	124	124	
Federal Phytosanitary	22	22	
Ribes Control	0	3	
Total fees received			**$ 34,280.00**

Regulations

The Bureau is in the process of re-writing the regulations. Dave Sheldon, Al Carl and Phyllis Michalewich have spoken with legal counsel and have made recommendations for changes, additions and deletions in the regulations. Hopefully these will be in place during FY96.

Survey and Trapping

Surveys were conducted for the presence of Gypsy Moth, Hemlock Wooly Adelgid, Lilyleaf Beetle, and Liliocerus lilii. Gypsy Moth was found to be light to none in the nurseries and their perimeters. Liliocerus lilii was found only in private lily growers' gardens. Hemlock Wooly Adelgid is continuing to spread through the Commonwealth hemlock woodlands, but as of yet has not been detected in any of our states' nurseries. The summer nursery inspection crew was utilized to scout for these insects as well as Dogwood Anthracnose.

Survey work was conducted throughout the Commonwealth for the possible presence of the Pine Shoot Beetle on Scotch and Austrian Pine Christmas Trees. Based on the fact that many cut Christmas trees do come into this state from known infested states such as Michigan, Ohio, Pennsylvania and New York. Sampling was carried out across the state. There were no finds of Pine Shoot Beetle, Tomiscus Dinipera which still has not to our knowledge been detected in Massachusetts.

In addition to this years' surveys, trapping was carried out in five greenhouses in three counties within the Commonwealth. The Department received notice that there were some geranium cuttings that had been distributed in Massachusetts that had come from the Canary Islands with infestations of Old World Bollworm and/or Tomato Looper. In cooperation with the USDA, phermone traps were distributed in the five greenhouses which were on a USDA list of greenhouses receiving geranium cuttings from the Canary Islands. The traps were checked weekly for eight weeks. No stages of these insects were found.

The Department's two certification programs for Cape American Beachgrass and virus free strawberry plants were also continued this year. There were no unusual finds during these inspections.

Collaboration with USDA - APHIS

Pest detection, Black Stem Rust, Postentry quarantine, insect, plant pathogen, soil and snail importations, into this state are cooperative activities with USDA, APHIS, PPQ. Ten nursery sites were approved this year to grow plants from foreign countries under USDA-APHIS- PPQ Postentry quarantine NO. 37. The Bureau of Plant Industries inspected each site twice during the growing season to ensure that undetected plant pathogens and new pests were not introduced into the Commonwealth. Inspections showed no unusual pests or diseases. If there are plants that should die within these particular shipments, this bureau is notified and the plants are disposed of properly.

Apiary Inspection

Six seasonal apiary inspectors were hired to survey Franklin, Worcester, Essex, Middlesex, Norfolk, Hampden, Hampshire, and Barnstable counties for American foul brood, *Bacillus larvae*, and *Varroa* mites, *Varroa jacobsoni*, during May , 1994; the program was in full swing by the first week of June and progressed satisfactorily through the summer, ending October 22, 1995. This staff was hired because of their ability to communicate with beekeepers and for substantial apicultural knowledge. Qualified apiary inspectors were unavailable for Berkshire, Plymouth, Bristol, Dukes, and Nantucket counties. It is often more efficient and expedient to re-assign existing personnel to counties without inspectors for trouble-shooting apiary management and disease queries, than to hire unqualified inspectors who may stimulate the ire of the beekeeping community. The same objective of maintenance of relatively disease free colonies was achieved without the acrimony experienced during previous apiary inspection seasons. Most beekeepers felt better about doing the right thing concerning a diseased hive situation by themselves, as opposed to receiving a lecture from a perceived intruder. The FY95 inspection season was education focused, rather than enforcement of procedure oriented.

Brood disease and varroa mite data are included in this report for the year ending 1994. American foul brood was detected in 2.98 % of colonies inspected; *Varroa* mite populations were detectable in 96.6 % of colonies surveyed.

Winter honey bee colony mortality averaged about 25%, with some beekeepers experiencing 50% to 100 % colony mortality in colonies not treated for varroa mites.

During May 1995, five seasonal apiary inspectors were hired to inspect apiaries in Franklin, Hampshire, Hampden, Worcester, Norfolk, Middlesex, and Essex Counties. As in 1994, only committed and qualified personnel were hired for seasonal employment. Several applicants from previously un-inspected counties were not hired due to inexperience. All apiary inspectors were on the job by the first and second weeks of June, 1995.

We hope to re-evaluate the necessity for conducting 100% apiary inspections, as opposed to regional survey to gage corrective action. Massachusetts beekeepers would rather be assisted and educated than directed with controls; the former has stimulated better long range beekeeping results than the later. American foul brood, honey bee tracheal mite, and varroa mites are here to stay; beekeepers' ability to live with these maladies, with assistance from a sensitive inspection program, will eventually re-establish an equilibrium in Massachusetts beekeeping. Apiculture at present requires application of basic husbandry, rather than an exercise in regulatory experimentation.

Educational Program

A slide presentation, originally prepared in 1984 and revised annually, illustrating disease and parasitic mite identification and control was designed to educate beekeepers at county and state meeting workshops.

Fact-sheets describing honey bee tracheal mite, varroa mites, and American foul brood, and their controls have been distributed to beekeepers upon request and during annual apiary inspections.

Beekeepers wishing to follow disease and parasitic mite control measures presented during workshops, illustrated in fact sheets, and re-enforced by obliging apiary inspectors, have managed to weather the tracheal and varroa mite storm. Beekeeper numbers have declined by about 33 % in the past ten years, while honey bee colony numbers are about 75 % of the 1984 populations.

Highly informed beekeepers have evolved over the past ten years. Those who are still keeping honey bees are knowledgeable enough to maintain a fairly static number of indigenous colonies; hive numbers may even gradually increase if introduced pollen and nectar sources, such as purple loosestrife are allowed to grow undisturbed. Tracheal and varroa mites have been widely spread in Massachusetts, since their respective introductions in 1984 and 1988; further attempts to eradicate them through legislative regulation, as attempted in 1991, would be a waste of time, money, and energy.

Apiary inspection pays for itself by alerting beekeepers to potential brood disease infections (early life stages) and excessive parasitic mite populations, all of which can be controlled if diagnosed early enough in the field. Beekeepers generally have been receptive to apiary inspectors, when they realize that the inspector has their interests at heart.

The annual enhancement value of honey bee assisted pollination of cranberries, apples, highbush blueberries, strawberries, brambles, and cucurbits is at least 100 million dollars in Massachusetts. This figure does not represent the value of the crops produced, but rather the value in additional production added to a particular crop by honey bee pollination. Considering that the annual honey crop averages about 250,000 pounds in Massachusetts, with an estimated net value of $350,000. Honey bee assisted pollination contributes 285 times honey production to this states' agricultural community.

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PESTICIDE BUREAU

INTRODUCTION

The Pesticide Bureau, within the Department of Food and Agriculture, is the state lead agency for pesticide regulation in Massachusetts. The Department operates under the authority of the Massachusetts Pesticide Control Act (M.G.L. 132B). Implementation of the Act is carried out through the Pesticide Regulations (333 CMR).

In addition to implementing pesticide laws and regulations, the Pesticide Bureau also serves as a source of expertise in pesticide related issues. Bureau personnel regularly provide assistance to the general public, industry, municipal and state agencies. Areas of expertise include health and environmental risks associated with pesticides, proper use and benefits of pesticides, and Integrated Pest Management.

The following is a summary of activities of the programs operating within the Pesticide Bureau. For additional information write or call:

Pesticide Bureau
MA Department of Food and Agriculture
100 Cambridge St., Suite 2103
Boston, MA 02202
(617) 727-3020

Personnel

Below is a listing of Pesticide Bureau personnel and their main area(s) of responsibility. To contact any member of the Pesticide Bureau, call (617) 727-3020. Appropriate extensions are listed below:

Name	Responsibility	Extension
Brad Mitchell	Bureau Chief, Toxicology	149
Lee Corte-Real	Groundwater, Chemistry Environmental Fate	126
Mark Buffone	Licensing, Entomology	128

Lillian Rivera	Product Registration, WPS	130
Iliana Rivas	GIS, IPM, Groundwater, Endangered Species	129
Dennis Guastalli	Rights-of-Way, Enforcement	135
Susan Reed	Clerical Support	147
Sandra Payne	Clerical Support	145
John Kenney	Chief of Enforcement	134
Karen Dixon	Enforcement	134
Paul Ricco	Enforcement	134
Andrea Szylvian	Enforcement	134

Personnel Changes

Clayton Hamon left his position as Pesticide Inspector to take a position as a Pesticide Inspector with the Nebraska Department of Agriculture.

Andrea Szylvian was appointed to the position of Pesticide Inspector. Ms. Szylvian came to the Department from USDA where she worked with the Integrated Pest Management program.

Iliana Rivas has taken on the responsibility of being the Department IPM Coordinator.

Gail Kaprielian left her position as Pesticide Bureau Chief after several years of valuable service in that position.

Brad Mitchell was appointed Pesticide Bureau Chief. Mr. Mitchell has served as the Bureau toxicologist for three years.

Enforcement

Enforcement data has been compiled for the 1995 federal fiscal year, ending on September 30, 1995. Reported activity began and/or was completed during that fiscal year.

A Senior Inspector from the Enforcement staff attended a training session in Texas on the Worker Protection Standard (WPS).

A Supervising Inspector has completed the CLEAR (Council on Licensure, Enforcement And Regulation) Specialized Program for Investigator/Inspector Training.

All Inspectors attended the annual training week conducted for New England pesticide program Inspectors, sponsored by EPA Region I.

During FY 95, 12 outreach/compliance WPS inspections were conducted:

Greenhouse:	8
General Agriculture:	2
Dealers:	2

In addition to the above, 16 Core WPS inspections were conducted:

Nursery:	4
Greenhouse:	7
General Agriculture:	4
Orchard:	1

Inspections for WPS were also conducted at 5 producer establishments.

As in past years, Enforcement continues to give lectures for the pesticide using community on related laws and regulations. These lectures have been sponsored by Co-operative Extension as well as various industry associations.

In addition to the many phone calls received about pesticide enforcement questions, Enforcement responded to 105 calls which required less than a completed investigation.

The Enforcement staff continues to investigate complaints as well as conduct routine inspections of pesticide user establishments and producers. The following types of inspections have been conducted:

Agricultural Follow up	4
Agricultural Use Observations	10
Non Agricultural Follow up	39
Non Agricultural Use Observations	43
Certified Applicator Records	66
Marketplace Inspections	57
Producing Establishment Inspections	21
Restricted Use Pesticide Dealer Inspections	14
Total:	254

The following samples were taken by enforcement personnel and sent out for analysis:

Samples To MA Pesticide Analytical Lab	114
Doc. Samples	46

The following notices/permits were issued by Enforcement personnel:

Notice Of Aerial Applications Of Pesticides	14
Permits For Aerial Application Of Pesticides	0

Enforcement Actions

The Department instituted a civil suit against a national pest control company regarding unlicensed pesticide applications. This action came to a conclusion this year with a mediated agreement in which the company agreed to pay a penalty of $150,100. This is the largest penalty ever obtained by the Bureau.

Enforcement Actions:

Civil Court	1 suit (concluded)
Warnings	28
Administrative Orders	13

Issues addressed in Administrative Orders

Operate in careful manner	1
Unlicensed use	6
Use inconsistent w/label,	9
Use of unregistered pesticide	1
Records violation	1
Improper method	1
Provide list of unregistered pesticide	1
Dispose of unregistered pesticide	1
Unreasonable adverse effect	1

Certification and Training Of Pesticide Applicators

Certification and License Types

Massachusetts pesticide law requires that all persons who apply pesticides in public and private places used for human occupation and habitation with the exception of residential properties with three (3) or less dwelling units, must be in possession of a valid license or certification.

There are four(4) types of pesticide certifications and licenses in Massachusetts. These are:

1. Commercial Applicator License
2. Dealer License
3. Commercial Certification
4. Private Certification

These different types of certification and license documents permit individuals to legally use pesticides including, but not limited to, purchasing, selling, applying, mixing, loading, storing, disposing, and transporting.

Certified and licensed applicators have a special responsibility to handle all pesticides safely. As a result, these individuals must demonstrate their competency through passing state pesticide examinations.

Certification and Licensing Examinations

Exam Frequency

During any fiscal year, a number of state examinations are offered to those seeking pesticide licensure. During FY 95, there were twenty-three (23) state examinations offered to individuals seeking pesticide licensure in comparison to fifteen (15) state exams for FY 94. This significant increase in exam frequency is even more noticeable if we compare increases in exam frequency by calendar year. There was a total of fifteen (15) exams during calendar year 1994 compared to 26 exams in calendar year 1995. (see: Exam Frequency Graph; Appendix 1 attached to the end of the section.)

Our objective during FY 1995 was to offer additional opportunities to take exams in order to assist those seeking pesticide licensure, and to promote compliance. The increase in exam frequency has in some situations, helped individuals to qualify for employment more quickly than previously possible. Also, it helps our program meet it's objective of insuring compliance with pesticide licensure requirements.

Most individuals taking these exams are employed in occupations which require the legal use of pesticides. For example, individuals working as lawn care and landscape specialists, exterminators, and arborists need a license to legally use pesticides. Other individuals, such as a custodian using pesticides in a school or a person growing sweet corn, need a license or certification to legally use pesticides for these purposes. Along with the total number of exams administered, examinations are scheduled so that they are available at least once a month. Finally, our exams are also scheduled to meet the times when pesticide applicators have the most need for exams.

Exam Statistics By License Type

During FY 1995 a total of one thousand four hundred and forty two (1,442) persons took various pesticide licensure exams. During FY 1994 there was a total of one thousand eight hundred and forty eight (1,848) people taking state exams. The higher numbers for FY94 were due to exam and license standards revisions that individuals knew would become effective on January 1, 1994. One major change in these standards was implementation of an experience requirement prior to being permitted to take certification exams.

The number of people taking state exams by license type are shown below:

EXAM TYPE	FY94	FY95
1. Commercial Certification Exam	574	181
2. Dealer License Exam	31	17
3. Commercial Applicator License Exam	1,108	1,163
4. Private Certification Exam	135	81
Total	1,848	1,442

(see: Exam Candidates Graph; Appendix 1 attached to the end of the section.)

Certification and License Documents

The process to obtain a pesticide certification or license involves registration and study experience.

Registration

During Fiscal Year 1995, several thousand pesticide exam and license information bulletins were mailed out to individuals and pest control companies. These fourteen (14) page bulletins provide interested individuals with guidance on how to obtain a pesticide certification or license. The bulletin includes an exam application, exam schedule, study guide order form, applicator license training course information, resume form to verify experience, and other useful information. This bulletin has been an administrative blessing since it was first developed by program staff. Mailing the bulletin has proven to be the quickest and most efficient means to respond to requests concerning exam and license information.

Study Experience

Those individuals seeking a pesticide certification or license need to learn pesticide concepts, principles, practices, regulations, and terminology. The study experience is a self-directed learning experience. Individuals purchase required study materials from the University of Massachusetts. Individuals are required to study the following materials.

General Applicator Manual
General Applicator Manual Supplement
Massachusetts Pesticide law and regulations
Specific Certification Manual

The self-directed study experience provides a flexible format where the individual can learn and gain essential pesticide knowledge at their own pace. However, there is classroom training (voluntary) covering the General Applicator Manual and Supplement.

Number of Certification and License Documents Issued

The number of certification and license documents issued are shown below:

CERTIFICATION/LICENSE TYPE ISSUED	FY94	FY95
1. Commercial Certification	2,495	2,650
2. Dealer License	132	142
3. Commercial Applicator License	1,544	2,152
4. Private Certification	1,606	1,621
Total	5,777	6,565

***NOTE*:** There was an increase of 788 license holder from FY 94 to FY 95. This represents approximately 14 % increase. This increase can be explained by new licensing standards that became effective January 1, 1994. (see: Number of Certification/Licenses Issued Graph; Appendix 1 attached to the end of the section.)

Renewal Applications

Once individuals demonstrate that they have acquired the necessary knowledge to handle pesticides in a safe manner, they are sent an application to obtain the pesticide license. Once an individual becomes licensed, the document must be renewed on an annual basis pursuant to state pesticide law and regulations. All certifications and licenses, with the exception of Dealer Licenses, expire on the December 31st of each year.(The Dealer License expires on the last day of February of each new year) As a result, individuals eligible to renew for the next year automatically receive a renewal application. These renewal applications are mailed out in October. Each applicator must renew their certification and/or license by January 1st. Otherwise, they are required to retake and pass state examination(s) to be eligible for a certification or license during the new year.

	FY 94	FY 95
Total Renewal Applications Mailed	5,750	6,053
Total Returned and Approved	5,290	5,531
Percent Compliance (%)	92%	91%

A closer look at those individuals who renewed for FY 94 and Fy 95 by certification and license type is shown below.

NUMBER OF PERSONS WHO RENEWED CERTIFICATION AND LICENSE	FY 94	FY95
1. Commercial Certification	2,582	2,497
2. Dealer License	117	126
3. Commercial Applicator License	1,073	1,349
4. Private Certification	1,518	1,559
Total	5,290	5,531

Strengthening the Standards

As reported in the 1993 Annual Report, an important regulatory initiative was approved regarding the certification and licensing standards. The strengthening of the certification and licensing standards, became effective during Fiscal Year 1995 (January 1, 1994).

Age Requirement

There is an age requirement to take state pesticide licensure examinations. An individual must be at least 18 years old. Until this change, there was no age requirement.

Experience Requirement

Before an individual can take commercial certification pesticide exams, the individuals must verify

they have appropriate experience and/or education. In effect, those individuals who have held a commercial applicator license for two years qualify to take the commercial certification examination. The intent of this change is to insure that individuals have specialized knowledge and skills before handling restricted use pesticides.

Uniform Closed Book Examinations

All examinations were changed to uniform closed book exercises. The closed book examination change was consistent with other state pesticide programs. This change provided an increased incentive to prepare thoroughly and prudently for state pesticide examinations.

Re-taking State Examinations

Limits were designated regarding the number of times an individual could take an examination. During any year, individuals could re-take any examination they failed as often as it took to pass the exam. The changes limited the number of times an individual could take an exam after receiving a failing score. If an individual fails an exam twice, the individual must wait three (3) months before re-taking it. If an individual fails an exam three (3) times, the individual must wait one (1) year before re-taking it.

These changes provide additional incentives for exam preparation, and allows candidates ample time to identify areas of weakness.

For FY 95, only twenty-nine (29) individuals failed state pesticide examinations twice while only two (2) failed exams three (3) times.

Expanding Who Needs A License

Along with strengthening standards, the Massachusetts Pesticide Control Act was amended to require that individuals who use pesticides "as part of their duties" in and around apartment buildings, condominiums, schools and similar facilities obtain a pesticide license. This change required individuals such as custodians, landlords, grounds, and maintenance personnel to obtain a pesticide license.

Ensuring Continued Competence

Within a specified time period, license holders must attend retraining/continuing education programs in order to maintain and enhance their licenses and or certifications. The old system of obtaining "credits" has been changed to one of accumulating "contact hours". A contact hour will equal fifty (50) consecutive minutes of training. In addition, the number of years to obtain training has been changed from five (5) to three (3) years. Finally, all pesticide certification and license holders are now required to attend training.

Conclusion

Fiscal Year 1995 proved to be another busy year for the Certification and Licensing program. All of the program activities such as overseeing exam administration, strengthening license standards, monitoring continued competency, developing competency examinations, and issuing

licenses serve the interest of the public and those of the various industries. Accountable and balanced, the program continues to carry out its statutory commitments.

Pesticide Product Registration

Federal Laws

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that before any person in any state or foreign country can sell or distribute any pesticide in the United States, they must obtain a registration or license from the U.S. Environmental Protection Agency (EPA). The term pesticide refers to any substance or mixture of substances intended for preventing, destroying repelling or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant.

The State Process

Under state law, any person who has obtained a product registration from the EPA, and intends to sell or use the product in Massachusetts, must then apply for a registration with the Department of Food and Agriculture. The registrant or an agent acting on behalf of the registrant, is required to submit an "Application for New Pesticide Registration", a Material Safety Data Sheet (MSDS), a product label. A fee of $100.00 dollars is required for each different EPA registration number.

New products are generally registered on a monthly basis. Every product label is thoroughly reviewed for compliance with state and federal laws. Products are then brought to the Pesticide Board Subcommittee for consideration. A registration is valid from a period beginning with the initial date of approval by the Subcommittee, and ending on the next June 30th. Each registration must be renewed annually, no later than July 1. The cost of registration and renewal is $100.00 per different EPA number.

The DFA generated $822,900.00 dollars from pesticide registration fees during July 1, 1994 - June 30, 1995. This amount was increased by approximately $20,000.00 dollars over last years figures. It is important to note that all money gained from the registration process goes into the Commonwealth of Massachusetts general fund. Currently there are approximately 8,834 pesticide products registered in the state.

Special Local Needs (SLN) Registrations

When a particular agricultural problem exists that can only be mitigated through the use of a pesticide that is not federally registered for that specific purpose, that pesticide's use may be regulated by the state under section 24(c) of FIFRA. Currently, there are 11 active SLNs.

MASSACHUSETTS ACTIVE SLN REGISTRATIONS

HACO (HOPKINS AG CHEMICAL CO.)
RAMIK BROWN
(DIPHACINONE) FOR USE IN ORCHARDS AGAINST RODENTS
EPA REG. NO. 876-184
MA SLN NO. 77-0001

RHONE POULENC
WEEDAR 64
(DIMETHYLAMINE-2,4-D) FOR USE ON CRANBERRIES AGAINST WEEDS
EPA REG. NO. 264-2
MA SLN NO. 79-0001

UNIROYAL CHEMICAL CO.
OMITE 6E
(PROPARGITE) FOR USE ON APPLES AGAINST SPIDER MITES
EPA REG. NO. 400-89
MA SLN NO. 82-0005

CIBA-GEIGY CORP.
DIAZINON 14G
(DIAZINON) FOR USE ON CRANBERRIES AGAINST CRANBERRY GIRDLER LARVAE
EPA REG. NO. 100-469
MA SLN NO. 83-0005

RHONE POULENC
LARVIN BRAND 3.2 THIOCARB INSECTICIDE/OVICIDE
THIOCARB FOR USE ON SWEET CORN AGAINST ARMYWORMS, CORN EARWORM AND EUROPEAN CORN BORER
EPA REG. NO. 264-379
MA SLN NO. 89-0001

ISK BIOTECH CORP.
BRAVO 720
(CHLOROTHALONIL) FOR USE ON CRANBERRIES AGAINST UPRIGHT AND RUNNER DIEBACK
EPA REG. NO. 50534-188
MA SLN NO. 90-0001

COMPLIANCE SERVICES INTERNATIONAL
CARBAMATE WDG FOR USE ON CRANBERRIES AGAINST FAIRY RING DISEASE
EPA REG. NO. 45728-7
MA SLN NO. 93-0002

ABBOTT LABORATORIES
DIPEL ES BIOLOGICAL
INSECTICIDE EMULSIFIABLE SUSPENSION FOR USE ON CRANBERRIES AGAINST GYPSY MOTH, CUTWORMS, CRANBERRY BLOSSOM WORM, FALSE ARMY WORM AND SPANWORMS
EPA REG. NO. 275-65
MA SLN NO. 95-0001

PLATTE CHEMICAL CO.
CURBIT EC HERBICIDE
ETHALFLURALIN FOR WEED CONTROL IN PUMPKINS, SUMMER SQUASH AND WINTER SQUASH
EPA REG. NO. 34704-610
MA SLN NO. 95-0002

CIBA-GEIGY CORP.
DUAL

METOLACHLOR FOR WEED CONTROL IN TRANSPLANTED CABBAGE AND TRANSPLANTED BELL PEPPERS
EPA REG. NO. 100-673
MA SLN NO. 95-0003

CIBA-GEIGY CORP.
DUAL 8E
METOLACHLOR FOR WEED CONTROL IN TRANSPLANTED CABBAGE AND TRANSPLANTED BELL PEPPERS
EPA REG. NO. 100-597
MA SLN NO. 95-0004

EXPERIMENTAL USE PERMITS (EUP)

State experimental use permits are required to control potential hazards of pesticide experimentation under out-of-door, greenhouse, and domestic animal trial conditions. To obtain an EUP, a state application must be filed with the Pesticide Board Subcommittee along with a product label, a copy of the EPA EUP and a fee of $100.00 dollars. This year the Subcommittee granted the following 2 EUPs:

MONSANTO COMPANY
BACILLUS THURINGIENSIS SUBSP. TENEBRIONIS (Btt)
AS EXPRESSED IN POTATO PLANTS AND TUBERS
TO EVALUATE EFFECTIVENESS AGAINST THE
COLORADO POTATO BEETLE
EPA EUP NO. 524-EUP-79
MA EUP NO. 95-0001

ABBOTT LABORATORIES
ABG-3168 PLANT GROWTH REGULATOR
TO EVALUATE THE USE OF ABG-3168 AS A STOP DROP
MATERIAL ON APPLES
EPA EUP NO. 275-EUP-80
MA EUP NO. 96-0001

Pesticide Board Subcommittee Actions

State Individual Reviews

An individual review is a reevaluation of an existing registration i.e. change of use classification, suspension or other limitation. In addition, a review is warranted for every product containing a new active ingredient (a.i.) never before registered in the state. What follows is a chart which outlines the new a.i. state individual reviews that were conducted by technical staff and what action was taken by the Subcommittee:

Registrant	Product Name/Active Ingredient	Use	Registration Status
Sandoz Agro, Inc.	Sentinel 40WG Fungicide EPA Reg. No. 55947-132 a.i. cyproconazol	Intended for the preventive control of a broad spectrum of fungal pathogens on golf courses and sod farms	Registered on July 20, 1994
Valent U.S.A.	Prism Herbicide EPA Reg. No. 59639-78 a.i. clethodim	Selective post emergence herbicide for control of a range of annual and perennial grasses	Registered on July 20, 1994
Miles, Incorporated	Merit EPA Reg. No. 3125-439 and Marathon EPA Reg. No. 3125-452-59807 (Nursery & Greenhouse) a.i. imidacloprid	Labelled for use against a variety of insect pests on turfgrass, ornamentals and interior plantscapes	Registered on August 17, 1994
DowElanco	NAF-46D EPA Reg. No. 62719-243 a.i. hexaflumuron	Insect growth regulator which inhibits chitin synthesis in insect exoskeleton	Registered on August 17, 1994
DowElanco	Suspend SC EPA Reg. No. 432-763-62719 a.i. deltamethrin	Insecticide labelled for use indoors and outdoors against: cockroaches, carpenter ants, and fleas	Registered on September 21, 1994
Mycogen Corporation	Scythe Herbicide EPA Reg. No. 53219-7 a.i pelargonic acid	A non-selective, non systemic contact herbicide for control of annual broadleaf and grass weeds and suppression of biennial and perennial weeds	Registered on October 19, 1994

Monsanto/Zeneca, a joint alliance, Acetochlor Registration Partnership (ARP)	Harness Plus Herbicide EPA Reg. No. 524-476 Surpass EC Herbicide EPA Reg. No. 10182-325 a.i acetochlor	A broad spectrum selective herbicide for the control of undesirable grasses and broadleaf weeds in field, pop and silage corn.	Pending Registration. Additional data has been requested by the Subcommittee.
Ciba-Geigy Corporation	Dividend Fungicide EPA Reg. No. 100-740 a.i. difenoconazole	A seed treatment for control of soil and seed borne diseases on wheat	Registered on April 26, 1995
Monsanto	Manage Turf Herbicide EPA Reg. No. 524-465 Permit Herbicide EPA Reg. No. 524-465 Battalion Broadleaf EPA Reg. No. 524-466 a. i. halosulfuron	Active against annual broadleaf weeds and nutsedge.	Registered on June 21, 1995
Valent U.S.A.	Resource Herbicide EPA Reg. No. 59639-82 **First food-use product to be registered as a reduced risk pesticide by EPA** a.i. flumiclorac pentyl	Labelled for post emergence control of broadleaf weds in soybeans and field corn.	Registered on June 21, 1995
EcoScience Corporation	Bio-Save 10 Biological Fungicide EPA Reg. No 64296-7 Bio-Save 11 Biological Fungicide EPA Reg. No. 64286-14 a.i. pseudomonas syringae	Intended for use as post harvest fungicides for use on stored apples, pears and citrus. Active against grey mold, blue mold, mucor rot, green mold and sour rot.	Registered June 21, 1995

Groundwater Protection Program

Program Update

In FY95, which was the fourth year of implementation of the Protection of Ground Water Sources of Public Drinking Water Supplies from Non-Point Source Pesticide Contamination Regulations (333 CMR 12.00), the Department received 5 applications for Pesticide Management Plans (PMP).

According to the provisions of the Regulations, a PMP is required to apply any of the Potential Groundwater Contaminants within the primary recharge area (Zone II) of a drinking water well.

The Department forwarded copies of each application, including additional pertinent materials, to the Departments of Environmental Protection (DEP) and Public Health (DPH) for comment. Following a comprehensive review of the proposed PMP applications, the Department approved, with additional restrictions, all five PMPs with the concurrence of DEP and DPH. In addition to IPM program requirements, further restrictions imposed on the PMPs included: reduced application rates, irrigation limitations, banding of applications, and agreement to allow sampling at wells on site.

The receipt and approval of the five PMP's is a reduction from the seven applications which were received in the previous year. The PMP applications were all received from applicators who had previously received approval of proposed PMP's. There has been a steady reduction in the number of PMP applications which have been received by the Department, from a high of 17 (of which 13 were approved) in the first year to the current five applications. It is significant to note that previously approved PMP recipients have chosen to either plant other crops or use alternatives to the regulated pesticides. Moreover, one PMP recipient have chose to use alternative pesticides following the denial of a PMP for some of his sites in the first year of the program. In addition, PMP applicants have requested and been approved for less pesticides and lower application rates.

There has been some concern that two primary non-regulated alternatives to regulated corn herbicides were being withdrawn from the market. There were some indications that the active ingredients *butylate* and *eptam* were being removed from the market by the registrant as the result of a new herbicide. This would significantly impact the ability of growers to switch to alternative products. It appears however, contrary to early reports, that other registrants will be maintaining the registration of products containing these active ingredients in Massachusetts for the upcoming year.

A breakdown of the applications granted by crop as well is as follows:

PMPs Granted

CROP	#
Corn	4
Strawberries	1

Enforcement

The Ground Water Protection Program had an enforcement case which began in FY93. The incident resulted from the application of two regulated pesticides to a parcel of land within the Zone II area of a public drinking water well in the town of Orange. The location of the parcel of land where the misapplication took place and the location of the wellhead were measured and plotted utilizing a Global Positioning System (GPS). Following a complete investigation, the applicator was cited for a violation of the groundwater protection regulations.

Program Assessment

The Bureau conducted a brief assessment of the impacts on growers of the Ground Water Protection Regulations. Surveys regarding the impacts of the regulations were developed and sent to Cooperative Extension personnel for their assessment of the economic and regulatory impacts, and the degree of compliance with the regulations. The general consensus is that the regulations have had less impacts than previously predicted, and that there has been good overall compliance. Pesticide Bureau inspectors have visited each PMP recipient and collected copies of actual use records of all pesticides applied.

Program Developments

A new facet of the Ground Water Protection Program is the projected acquisition of Global Positioning Systems (GPS) equipment. GPS is a satellite based positioning system which can identify the coordinates (latitude and longitude) of any point of the face of the earth. (This is the same system that allowed U.S. troops to know where they were in the deserts of Iraq during the Gulf War and is used in the navigation of cruise missiles.) Program staff will be identifying the location and plotting the boundaries of each field which has received an approved PMP.

The GPS information will then be transferred to a Geographical Information System (GIS) for the plotting the location of the PMP sites and public well locations which have also been located by GPS. In addition, GIS is capable of maintaining additional information, beyond its geographic location, regarding the site such as: which regulated pesticide was applied, at what application rate, what type of soil, etc. GIS has been used to print the custom maps which are sent to each Board of Health to assist applicators in determining if their fields were within a Zone II area.

The GPS equipment will also be used to identify the exact location of each well which has been sampled for either the Public Drinking Water Well Sampling program either for the monitoring requirements of the State Pesticide Management Plan which are described below.

Public Drinking Water Well Sampling Program

The Protection of Ground Water Sources of Public Drinking Water Supplies from Non-Point Source Pesticide Contamination Regulations was designed to mitigate potential contamination of public drinking wells by regulating the use of Potential Ground Water Contaminants (PGWC). The Regulations contain provisions which permit the use of PGWC within the primary recharge area of public wells if an applicant obtains an approved PMP from the Department. Consequently, the Department initiated a public drinking water well sampling program in order to assess the efficacy of the Regulations and to assure that public drinking water wells were not being contaminated by pesticides permitted under the PMP process.

The Department initiated a sampling program in 1991 to obtain background information of potential impacts of previous PGWC applications. The sampling program has continued in order to assess the regulations and assure that the PMP process in not resulting in unacceptable ground water contamination. The program sampled public drinking water wells throughout the state which have agricultural lands within their zone of contribution.

The Department had previously identified approximately 90 wells which had agricultural land within

their primary recharge areas or had been suggested by DEP. Wells chosen for sampling were divided between those with interim and delineated primary recharge areas based on the approximate percentage of each type of primary recharge area as compared to the total number of wells in the state. The Department sampled 83 of the 90 wells identified and there were no detections of PGWCs in any public drinking water well, including wells which have had PMPs granted for the use of PGWCs within their primary recharge area.

In the previous fiscal year an additional 50 wells were targeted for sampling for regulated pesticides. These included all wells which had current or previously approved PMPs and additional wells which were identified as having agricultural land within their Zone II's. The sampled wells included some which had previously been sampled in addition to other new wells which were added due to better public drinking water well information.

The Department has sampled approximately 130 wells, which represents approximately 20% of all public drinking water wells covered by the Regulations. To date there has not been any detections of any regulated pesticides. In addition, the phase II requirements of the Safe Drinking Water Act mandate sampling for a large number of the active ingredients contained in a list of regulated active ingredients. Consequently, the Department has temporarily suspended broad scale sampling of public drinking water wells and will focus on obtaining background information on groundwater quality for future reference.

Pesticide Product Reclassification

On January 1, 1992 the regulations "*Protection of Groundwater Sources of Public Water Supplies from Non-Point Source Pesticide Contamination*" (333 CMR 12.00) became effective. One provision of the regulations requires the Department of Food & Agriculture to prepare a list of products, "the Groundwater Protection List", which contain active ingredients identified as Potential Groundwater Contaminants. The Regulations prohibit the application of these products within the zone of contribution (Zone II) of Public Drinking Water Wells. During the generation of the List, it became apparent that a large number of products which have uses that require soil application techniques were classified as general use.

The Department notified all licensed applicators about the provisions of these Regulations, but since many of these products were classified as general use the Department was unable to notify other potential applicators who are unlicensed. Therefore, there may have been significant use of products included on the Groundwater Protection List within Zone II areas that the Department is unable to regulate due to the general use classification of these products. Consequently, the Department proposed to reclassify the large scale use products (e.g. agricultural) as State Restricted Use - Due to Groundwater Concerns in order to ensure that these products are not being applied within the Zone II areas.

In November of 1994 the Bureau proposed to reclassify general use products containing the active ingredients identified as Potential Groundwater Contaminants to “State Restricted Use” due to groundwater concerns. The reclassification of products to "Restricted Use - Due to Groundwater Concerns" has been previously used by the Subcommittee to protect the environment and is now being proposed by the EPA for the exact same purpose.

The proposed reclassification did not place any additional products on the Groundwater Protection List since these products were previously on the list, but were classified as general use. The reclassification merely allows the Department to ensure that these products on the "List" are not being applied by non-certified applicators within the Zone II areas and impacting public drinking water wells.

The majority of farmers in Massachusetts currently hold valid private certifications and most commercial companies have certified applicators in the appropriate categories who may supervise licensed applicators that apply restricted use products. Therefore, the reclassification of these products does not preclude their use by the vast majority of current users, but will provide additional protection for the groundwater and public drinking water wells in the Commonwealth from compounds which are identified as Potential Groundwater Contaminants.

The Regulations "*Protection of Groundwater Sources of Public Water Supplies from Non-Point Source Pesticide Contamination*" (333 CMR 12.00), which were adopted by the Pesticide Board established that the continued use of the pesticide products on the Groundwater Protection List may cause unreasonable adverse effects on the environment without the further restrictions. The Regulations place restrictions on the continued use of pesticide products on the Groundwater Protection List. However, the general use classification of the pesticide products on the Groundwater Protection List prevents the Department from adequately enforcing the provisions of the regulations.

The Subcommittee previously reclassified (April 8, 1986) products containing certain active ingredients as State Restricted Use based on their ability to adversely impact groundwater and their labeled use patterns. The use patterns most commonly identified as contributing to groundwater contamination are pesticides that are applied into the soil, at high application rates, and to a broad areas. These contributing factors to ground water contamination are more typical of agricultural or commercial applications of pesticides as compared to homeowner uses.

Therefore, the Department recommended that the Pesticide Board Subcommittee accept the review of the pesticide products which created the Groundwater Protection List, and reclassify agricultural / commercial pesticide products on the Groundwater Protection List as State Restricted Use based on ground water concerns. The reclassification will limit the use of these products to licensed applicators which have at minimum passed a Pesticide Specialty Exam, and which are less likely to misapply these products resulting in ground water contamination.

In March of 1995 the Pesticide Board Subcommittee voted to reclassify all agricultural and commercial products that have soil uses and which contain the following active ingredients: acifluorfen, bentazon, chlorothalonil, diuron, disulfoton, folpet, fonofos, lindane, and MCPA as State Resticted Use - Due to Groundwater Concerns.

EPA Ground Water Protection Strategy

State Pesticide Management Plans

The central goal of EPA's Pesticides and Ground-Water Strategy is to manage the normal, registered uses of pesticides in order to prevent adverse effects to human health and the environment, and to protect the integrity of the nation's ground-water resources. A principal tenet of

this strategy is that as a result of the site specific nature of pesticide use and the potential for ground water contamination, the states need to take the lead role in managing agricultural chemicals.

In order to promote the state role, the EPA has recommended that states develop Generic State Management Plans to manage pesticides for the prevention of ground-water contamination. Generic SMPs should address pesticide use in all geographic areas, including rural and urban areas, golf courses, and rights-of-way. This approach permits the tailoring of pesticide management measures to meet the specific local ground water protection needs.

The Pesticide Bureau, with input from the Department of Environmental Protection and Public Health, is developing a Generic State Management Plan (GSMP) in order to address the requirements of the EPA's Pesticides and Ground Water Strategy and of the Department's ground-water protection strategy.

Rights of Way Management (ROW)

During 1995, the ROW Program addressed the concerns of both municipalities and the regulated industry. Maintaining a solid working relationship between the Department and all interested parties was the major goal of the program. The program will encourage the Communication and Pipeline Industries to interface into the Rights-of-Way program for 1996.

The Rights-of-Way program through a series of development and executive meetings with the **Eastern Edison** and the **Montaup Electric Companies** of Southeast Massachusetts, mainstreamed over 4000 acres into the ROW program for the first time. Eastern Edison developed a Vegetation Management Plan and Yearly Operational Plan and initiated a successful first year schedule in 1995. It developed and maintained it's ROW (Rights-of-Way) through an IVM (Integrated Vegetation Management) practicum.

Compliance Monitoring

Four use inspectional observations were conducted by the Enforcement Division of the Pesticide Bureau specifically dealing with the Rights-of-Way program. Of these, all were conducted on Rights-of Ways bordering sensitive areas and major rail lines. Additionally, 18 individual inspections were made to Conrail, Amtrak and New England Central, Boston and Maine and Providence and Worcester Railroads. These individual checks determined accurate rail markings, delineation checks and specific enforcement re-checks after initial applications.

There were approximately 42 individual visitations by Enforcement Staff to Cities and Towns throughout the State to educate the Conservation Commissions and Selectmen's / Mayor's offices and Boards of Health as to the Municipal "ROADWAY", VMP and YOP process. These educational visits were part of the Rights-of-Way programs' "COMPLIANCE THROUGH EDUCATION" strategy which will be integrated in 1996. It's purpose to educate individual Towns and Municipalities as to the need to develop individualized IVM practices geared to the local level when applying herbicides to maintain roadways.

In 1996 **all Massachusetts Highways** consisting of over 2500 miles of State roads and the **Massachusetts Turnpike Authority** consisting of approximately 147 miles of roadways will be

entering the program. This will be a major addition to the program.

One oil/gas/fuel pipeline has indicated it is in the development stage of it's VMP and YOP for entrance into the program for 1996. (Buckeye Pipeline)

Sensitive Areas

In September 1995 the ROW Program mailed a press release request for "Private Well Identification" to all major media outlets. The Department gathered information from 49 municipalities regarding the identification of private wells under sensitive area protection. Over sixty additional 60 well locations were recorded most along "municipal roadways".

Vegetation Management Plans

There were seven Vegetation Management Plans submitted and approved in 1995. The companies gaining approval for new five year plans were:

The New England Power Companies which include: Massachusetts Electric Company, and New England Hydro Transmission.

The Northeast Utility Companies which include: Western Massachusetts Electric, Holyoke Water and Power Company, and Holyoke Power Electric Company.

The Massachusetts Bay Transportation Company (MBTA)

The Massachusetts Railroad Association which includes the following railroads:
Amtrak National Railroad Passenger Corp., Bay Colony Railroad, Central Vermont Railroad, Conrail, Housatonic Railroad, The Massachusetts Bay Transportation Authority, Transportation Lines, (Purple Lines), Massachusetts Central Railroad, Pioneer Valley Railroad, Providence and Worcester Railroad.

The Massachusetts Turnpike Authority

The Massachusetts Highway Department

Yearly Operational Plans

Fourteen Yearly Operational Plans (YOPs) were submitted to the Department covering Rights-of-Way activities in over 237 Towns and Municipalities in the Commonwealth.

Additional Education

In 1995 the Supervisory Inspector attended and completed the following courses:

- Passed the National Certified Investigator Training Examinations in Level 2.
- Completed Affirmative Action/Cultural Diversity Course

- Completed Managing Troubled Employees Course
- Completed a Massachusetts Department of Environmental Protection Wetlands Identification Course BVW (Bordering Vegetative Wetlands) course. Field identification and classification of wetlands based on vegetation and soils.
- Global Positioning System GPS (DEP) level 2 field work.

Wetland Impact Study Finding

Although Utilities are exempt from the Wetland Protection Act, the ROW Program established a mechanism to ensure that the use of herbicides in wetlands would not pose an unreasonable risk to sensitive areas. The regulations prohibit utilities from using herbicides in wetlands until a finding is issued from the Department determining that the risk from the use of herbicides in wetlands is less than other control measures. The major concerns center on whether herbicides pose a lesser risk to the wetlands than mechanical control measures to control vegetation. The DFA finding is based on the study (the scope of which was approved by DFA and DEP) and in consultation with the VMP Advisory Panel and the Department of Environmental Protection.

In October of 1995 the Wetland Impact Study concluded. The Department issued a finding (determination) which included a number of conditions. The finding ensured that specific conditions must be met and these conditions become part of the overall Rights-of-Way program and be included within all Yearly Operational Plans and Vegetation Management Plans as submitted in 1996.

On October 12, 1995 after years of intense work of many individuals, Commissioner Jay Healy signed the completed determination.

Geographic Information Systems (GIS)

General Information

Geographic Information Systems, or GIS, is a sophisticated computer system that uses "geographically referenced" information to integrate and correlate data. A good GIS system is capable of compiling, storing, manipulating, and displaying this spatial information in both a graphic and tabular format.

At the state level, the Massachusetts Executive Office of Environmental Affairs has developed a geographic information system for use in managing Massachusetts' environment. The GIS software program used by all of the State environmental agencies, including the Department of Food and Agriculture (DFA), is called ARC/INFO. This GIS system is housed under the **MassGIS** office which serves as a data distribution center. The DFA's Pesticide Bureau relies heavily on GIS for the implementation of its Groundwater Protection Program, as well as for its educational efforts in support of the Federal Endangered Species Program, and the State's Integrated Pest Management (IPM) grower-certification program. The specific uses of GIS for the management and implementation of these various programs is discussed below.

Groundwater Protection Program

Background

In 1992, the DFA's Pesticide Bureau implemented regulations 333 CMR 12.00 entitled **Protection of Groundwater Sources of Public Drinking Water Supplies from Non-Point Source Pesticide Contamination**. The purpose of these Regulations is to minimize the non-point source pollution of public water supplies by certain pesticides deemed to be potential groundwater contaminants. Public water supply wells with a capacity to pump 100,000 g/p/d or over are protected under these Regulations. GIS continues to play an instrumental role in program planning and assessment activities, and is the key factor used for the effective implementation of these Regulations.

GIS and Regulatory Implementation

As part of the strategy for the implementation of said Regulations, the Pesticide Bureau focuses on information dissemination and education in its effort to achieve compliance from the regulated community. Under this strategy, GIS is used to both identify areas of concern and to graphically display this important information.

This implementation approach requires the identification of the resource to be protected. Specifically, a list of Massachusetts towns which contain a Primary Recharge Area, or portion thereof, within their community boundaries is compiled with the help of a GIS. A Primary Recharge Area, or Zone II, is defined under the Department of Environmental Protection's **Groundwater Source Approval Regulations** (310 CMR 22.02) as "...that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation) ....". Wherein a DEP approved Zone II has **not** yet been delineated for a public water supply well or wellfield, the DEP will apply an interim area of special protection. For wells pumping 100,000 g/p/d or above this interim area is represented by a 1/2 mile radius. As such, it should be emphasized that Zone IIs may be of two types : delineated Zone IIs, and interim Zone IIs.

It is noteworthy that this GIS selection process may include communities that do not have a public water supply system but which, nonetheless, may have a partial Zone II in them by virtue of having an overlapping wellhead protection area from an **adjacent** town. This GIS application is implemented on a yearly basis to reflect any changes or updates in the well data as maintained by the MassGIS Office. It should be noted that the water supply information available through MassGIS is supplied by the Massachusetts DEP.

Once this initial application is completed and represented in tabular format (i.e., a report printout), GIS is then used to **graphically** display this information on a community wide basis. Individual town maps of the listed municipalities are developed and printed for public distribution. Specifically, these GIS maps illustrating said Zone II areas are mailed to the local boards of health of each town for display purposes. Through the visual illustration of this important information and its accessibility at the local level, pesticide applicators are then able to determine whether or not their intended application site(s) is located within one of these sensitive zones. This determination allows members of the regulated community to ascertain whether or not they are subject to regulatory controls. A sample GIS town map is included in Appendix 2 at the end of this Chapter.

For the purposes of regulatory compliance during the **1995** calendar year, **183** towns were identified as having a Zone II area based on the MassGIS information available at the time; this compares to a total of 181 towns for 1994. Changes in the data may be a result of additional public wells coming on line, and/or the approval of wellhead protection area delineations which, by and large, encompass a greater buffer zone than the interim Zone II areas represented by the 1/2 mile radius. These 183 GIS town maps were mailed to the respective boards of health in January of 1995. A second set of maps was printed for the Department's internal use and for additional public access, and is retained at the Pesticide Bureau.

As part of this effort to achieve regulatory compliance, the Pesticide Bureau also notifies all certified/licensed pesticide applicators in Massachusetts of the listed towns and regulated active ingredients through yearly **Information Bulletins**. This mass-mailing (approximately 6,500 pesticide applicators are licensed and/or certified in Massachusetts on an annual basis) represents an important effort at information dissemination on behalf of the groundwater protection program. A sample of this double-sided Bulletin with the town-listing for **1995** is included as Appendix 3 at the end of this Chapter.

U.S. EPA Endangered Species Protection Program

Background

In order to comply with the Federal Endangered Species Act as it relates to pesticides, the US Environmental Protection Agency (EPA) is developing an Endangered Species Protection Program. To date, this Program is implemented on a voluntary basis. To this end, the EPA encourages state-initiated plans that account for local conditions. During 1995, the Pesticide Bureau used GIS extensively in support of this federal Program through education and information dissemination efforts. (For more specific information on this federal program other than GIS efforts, please refer to the section entitled **Endangered Species Program**.)

GIS Initiatives

Specifically, these GIS initiatives entailed the following :

• **Compilation of Information** on Federally Listed Endangered Species: GIS Datalayers. The Pesticide Bureau has developed a close working relationship with the State's Division of Fisheries and Wildlife - Natural Heritage and Endangered Species Program (NHESP) - in regard to species information including species identification, confirmation, and habitat delineation. In terms of GIS efforts, the Pesticide Bureau requested of the NHESP Data Manager to provide a means by which federally listed species may be distinguished from other state listed species. In response, a separate and unique datalayer was developed for DFA purposes illustrating **species point locations** (representing species 'class', rather than individual 'type' of species, due to data security concerns) which allows the Pesticide Bureau's own GIS unit to display only those species protected under this federal program. Additionally, a datalayer displaying **species habitat** (also represented by species class) was developed. These two separate GIS datalayers became available in April/May of 1995, and are the foundation for other related GIS efforts.

• **Dissemination of Information and Education Efforts** on federally listed Endangered Species : GIS Maps. The Pesticide Bureau has made full use of its GIS capabilities and access to GIS

species information to map the best available species location information. These map products include the following :

- A statewide map (30" x 42") illustrating species habitat information, and species point locations coded by species class.

- A mylar-based statewide map (30" x 42") illustrating Massachusetts **agricultural landuse** information. This mylar media is particularly suitable for overlay purposes in order to identify potential pesticide use sites and their overlap into species habitats.

- A county-based map (30" x 42") illustrating Massachusetts counties wherein federally listed species are located. All counties illustrate both species point locations and habitat information at a larger scale than that displayed under the statewide map.

- A county-based map (30" x 42") illustrating Massachusetts counties and their respective agricultural landuse information. Again, this landuse information is particularly useful since, traditionally, agriculture has been considered a high user of pesticides. As such, this map provides a clear illustration of potential pesticide use sites in terms of their proximity to species habitats.

- A brochure map (17" x 11") illustrating species point locations by species class for general distribution purposes.

- A brochure map (17" x 11") illustrating species habitat information for general distribution purposes.

The Pesticide Bureau is disseminating this 'mapped' information to the State's Cooperative Extension System - the UMASS Extension - for use during their Pesticide Applicator Training Workshops. Additionally, the Pesticide Bureau will make these maps available to sponsors of Pesticide Applicator Continuing Education and/or other members of industry upon request, i.e., this map series may distributed through the State's MassGIS office on a cost-recovery basis. By targeting and informing pesticide users of those general areas inhabited by *federally* listed endangered species, these maps aim to minimize the impacts of pesticide uses around these sensitive zones or wildlife corridors. The distribution of these maps will supplement not only the Federal EPA efforts in regard to the proposed "County Bulletins" approach, but also, will serve to visibly involve the State in these activities and distinguish the Bureau as an acting partner in this process towards species protection. Additionally, the Pesticide Bureau provided the EPA Region I Office with copies of these maps.

Integrated Pest Management (IPM) Program

Background

Integrated Pest Management, or IPM, is an ecologically-based approach at pest control that links together several related strategies, including monitoring and scouting, biological controls, mechanical and/or other cultural practices, and pesticides. (For more detailed information on the Department's IPM Program other than the GIS efforts related here, please refer to the IPM Section of this Annual Report).

The Partners with Nature program, initiated as a pilot-project in 1993, recognizes Massachusetts growers who have taken special steps in practicing Integrated Pest Management. This program is a collaboration of the UMASS Extension, the USDA Farm Service Agency, as well as the DFA and, currently, is the only IPM certification program of its kind at the national level. The Partners program is implemented on an annual basis.

GIS Initiatives

GIS has been used during both the 1994 and 1995 season to map the town locations wherein these farms are located, as well as to indicate the crops which are IPM-certified under each farm. Two GIS maps were developed : a color 30" x 40" statewide map illustrating Massachusetts towns and counties including this grower-information; and a black-and-white, 17" by 11" map incorporating this same information which is useful for report formats or brochures, and may be easily reproduced. This graphic display of information is particularly useful for educational purposes on IPM in general and, more specifically, for the marketing and promotion of these uniquely certified farms.

It is noteworthy that this IPM related, GIS application was submitted and accepted for presentation at a November conference held in Boston on **Environmental Enhancement through Agriculture** sponsored by Tufts University and the Henry A. Wallace Institute for Alternative Agriculture. A sample of this GIS poster presentation is included as Appendix 4 at the end of this Chapter.

U.S. EPA Endanered Species Protection Program

Background

In 1973, Congress passed the Endangered Species Act (ESA) "...to provide protection for animal and plant species that are threatened or endangered of becoming extinct, and to conserve the ecosystems upon which they depend." Under the Act, all federal agencies must ensure that "... any action authorized, funded, or carried out by the agency will not be likely to jeopardize ... a listed species..." This duty extends to the registration of pesticides by the Environmental Protection Agency (EPA).

In an effort to comply with this federal mandate, the EPA is in the process of developing an Endangered Species Protection Program. For the purposes of an effective implementation process, the Program intends to use a pesticide product labeling/bulletin approach aimed at protecting a listed species without creating unnecessary burden on the agricultural community and other pesticide users.

At this time, the EPA encourages voluntary measures to protect federally listed species during the interim period prior to regulatory implementation of the Program. To this end, the EPA encourages, in fact, **urges** states to develop State Initiated Plans. According to the EPA, the Agency "...intends to rely heavily on the results of the variety of State-initiated plans, special pilot projects and implementation strategies. The results of these projects, along with public comments on the proposed program will identify the reasonable and prudent means to implement the final program.".

State Initiatives

With this in mind, the Pesticide Bureau initiated its support of this voluntary, federal program by engaging in activities centered around information dissemination and education. In so doing, this approach aims to provide a better understanding of the issues involved and enhance compliance with the Act by pesticide applicators, as well as by the general public. It should be noted that among various initiatives, the use of GIS features as a prime contributor in support of this education/information-based strategy. However, for more detailed information on these various GIS applications, please refer to the special section entitled **Geographic Information Systems**, or GIS. The initiatives described herein reflect the Pesticide Bureau's **non**-GIS efforts; any brief reference to GIS applications indicated here merely serves to complement the overall description of related program activities.

• **Compilation of Information** on Federally Listed Endangered Species : During 1994 and 1995, the Pesticide Bureau developed a close working relationship with the State's Division of Fisheries and Wildlife - Natural Heritage & Endangered Species Program (NHESP) - in regard to species information including species identification, confirmation, and habitat delineation. Specifically, these data collection efforts resulted in producing the following : Database printouts (species status); GIS 'federal' datalayers (illustrating species point locations, and habitat areas); Federally-listed species information table.

1. Database Printouts: The Pesticide Bureau requested specific information on the state's federally listed species in order to confirm this data with that reported under the federal program. In response, the Bureau obtained two complete **database printouts** listing all federal (and state) species by county occurring both currently (since 1969) and historically (prior to 1969). Data comparisons based on the latest federal reporting in hand vs. state listings is helpful in illustrating potential discrepancies between the two data sources, and in consolidating these important sources of information. It should be noted that the information maintained at the state level is used for the purposes of this program given that these distinct data sets are said to contain the more accurate, and up-to-date information on listed species for Massachusetts. New printouts will be solicited from this sister agency subject to any revisions or changes in the data.

It is noteworthy that of the **fifteen** species listed as federally endangered, all represent terrestrial and/or freshwater species. An additional eleven federally listed species are not included for the purposes of this program since they represent marine mammals and turtles. As such, potential pollution of these coastal waters by non-point sources of pesticide contamination is less defined.

2. GIS Datalayers : The NHESP maintains important information on a GIS capable of being accessed by the Pesticide Bureau's own GIS unit. With this in mind, the Pesticide Bureau requested of the NHESP Data Manager to provide a means by which federally listed species may be distinguished from other state listed species for use with a GIS. (Refer to GIS section for more specific information on this datalayer information.)

3. Listed Species Information Table : This table, compiled by the Pesticide Bureau based on information from the NHESP, lists Massachusetts' federally ranked species according to species name (common and scientific), species group, county location, and current (after 1969) versus historic (prior to 1969) sitings.

- **Dissemination of Information and Educational Efforts** on Federally listed Endangered Species : GIS Maps; Brochures; Flier-listing.

1. GIS Maps : The Pesticide Bureau has made full use of its GIS capabilities and access to GIS species information to map the best available species location information. These map products include six distinct GIS applications and are listed under the GIS section of this Annual Report. It should be noted here that this 'mapped' information is disseminated to the State's Cooperative Extension System - the UMASS Extension - in support of their Pesticide Applicator Training Workshops. Additionally, the Pesticide Bureau will make these maps available to sponsors of Pesticide Applicator Continuing Education and/or other members of industry upon request, i.e., this map series may be distributed through the State's MassGIS office on a cost-recovery basis.

2. Brochures : During FY95, the Pesticide Bureau engaged in additional information dissemination/educational efforts. Specifically, the Bureau developed **two** informational brochures on this federal program for distribution to pesticide applicators and the general public. One brochure entitled : **Pesticides and Our Endangered Species : Understanding the Basics** describes this program and the Department's role in it. A second brochure entitled **Pesticides and Our Endangered Species : Getting to Know Massachusetts' Endangered Species** focuses on a description of the Commonwealth's federally listed species and their sensitivity to pesticides. These brochures were reviewed by the US EPA, the UMASS Extension, the NHESP, and two additional Pesticide Bureau staff members for content. The Bureau printed the first lot of these brochures for public distribution, and is providing copies to the UMASS Extension in support of their applicator training programs.

3. Flier-Listing : As a result of its **compilation** of information efforts indicated above, the Pesticide Bureau has condensed this data onto an 8.5 x 11 table format. This current and historical county-based listing of the federally ranked species is further complemented by an illustration of each species. The result is a double-sided flier illustrating pertinent information in a tabular format which is useful for general distribution purposes providing basic information "at-a-glance", on these federally listed, endangered species. A copy of this flier is included as Appendix 5 attched to the end of this Chapter.

Integrated Pest Management (IPM) Program

Background

Integrated Pest Management, or IPM, is an ecologically-based approach at pest control that links together several related components, including monitoring and scouting, biological controls, mechanical and/or other cultural practices, and pesticide applications. By combining a number of these different methods and practices, satisfactory pest control can be achieved with less impact on the environment. In other words, IPM is a total management, environmentally sensitive approach at resolving pest problems. An IPM strategy is applicable to both agricultural and urban settings.

Massachusetts has been involved with Integrated Pest Management since 1978 when the first University of Massachusetts Extension (UMass Extension) IPM programs were initiated. As a result of intensive research, a number of different commodities have IPM standards including apples, cranberries, cole crops, potatoes, tomatoes, strawberries, sweet corn, as well as landscaping and turf.

During 1994-1995, the Department of Food and Agriculture (DFA) focused its efforts towards developing an IPM strategy that would both complement and enhance current IPM initiatives statewide. To this end, a program strategy involving both educational and marketing components was introduced. The activities outlined herein illustrate the number of different IPM-related efforts supported by the Department within the context of this program strategy. It should be emphasized that this IPM Program is part of a coordinated, Department-wide effort.

Agricultural IPM

• **IPM Certification : Partners with Nature Program**. In an effort to support and recognize Massachusetts growers who have taken special steps in practicing Integrated Pest Management, an IPM-grower certification program was launched in 1993. Partners with Nature is a voluntary, collaborative effort of the Department of Food and Agriculture (DFA), the UMass Extension, the USDA's Farm Service Agency, as well as Massachusetts growers.

This program certifies the practice by which certain crops are grown. That is, growers who meet specific IPM standards, document their methods, and complete a verification process become IPM-certified and receive a 'certification' package from the Department. This package includes both educational and marketing materials such as the following : a Certificate of Recognition from the Commonwealth of Massachusetts signed by the DFA Commissioner; a Partners with Nature poster with the name of the individual farm; IPM brochures and a Partners pamphlet for public distribution; an IPM Education Kit developed by the Department which includes media tips that growers may follow in support of their efforts; and special license to display the Partners with Nature trademark. A copy of this trademark is illustrated here. A summary of the end of year information is included as Appendix 6 at the end of this Chapter.

As a result of positive feedback, Partners has evolved from its original pilot phase into a full-fledged program for the 1994 and 1995 growing seasons. In fact, during 1995, IPM standards were made available for **five** crops, including strawberries, sweet corn, tomatoes, cole crops (e.g., cabbage, cauliflower), and potatoes. Also during the 1995 season, ten additional farms joined the program bringing the total to thirty-seven, accounting for the IPM-certification of 68 individual crops (i.e., growers may become IPM-certified in more than one crop). This compares to 40 crops on 27 farms during 1994. Currently, Partners is the only IPM-certification program of its kind at the national level.

• **IPM Communications Plan**. In an effort to further support growers who practice IPM, urge non-IPM growers to adopt IPM principles, and educate the public on IPM in general, the Department allocated resources to towards the development of an IPM Communications Plan. To this end, the DFA hired a private consulting firm which submitted a plan in June 1995.

The main objective of this Plan is to increase awareness of IPM as a state-of-the-art, environmentally responsible practice in which Massachusetts is leading the way in agriculture. Specifically, the Plan aims to achieve the following : heighten consumer interest in, understanding of, and acceptance of IPM-grown produce; enhance grower support of Partners with Nature IPM certification; encourage use of formalized IPM practices among other growers who elect to remain outside of the Partners program; support sales of IPM-grown produce into distribution channels beyond farmstands; position Massachusetts as a national leader in IPM.

In addition to this program outline, launch materials were developed which included a four-color poster distributed to IPM growers, an IPM Press Kit which serves as the basis for other communication pieces, and the development of a 30 second radio PSA (Public Service Announcement) sent to radio stations around Massachusetts.

In accordance with the recommendations presented under this Plan, the Department coordinated a Press Conference, and three additional "media" days throughout the 1995 growing season. The list of dates and sites were as follows : May 31st, Allandale Farm, Brookline : Massachusetts Unveils Consumer Education Program To Promote Integrated Pest Management (IPM) Program; July 19, Cecchi Farm, Agawam : Grower is Certified in Environmental Program; August 8, Volante Farm, Needham : Grower is Certified in Environmental Program; October 12, Shelburne Farm, Stow : Local Apple Grower Recognized for Use of Environmentally Responsible Farming Methods.

Urban IPM

As indicated above, an IPM strategy may also apply to urban environments. For the purposes of the Department's IPM efforts, the "urban" setting may include **indoor** structures, such as residential dwellings (e.g., single-family homes, apartments), commercial and public buildings (e.g., restaurants, stores, hospitals, schools), as well as **outdoor** "urban" areas like sports playing fields, town commons and other landscaped grounds, golf courses, and even home gardens. The main objective behind the development and implementation of an Urban IPM Program is to advance IPM practice within these environments, as well as to enhance consumer education and information on IPM as it relates to these urban settings.

In support of its overall IPM Program thrust and, more specifically, its "urban" IPM efforts, the Department defined an Urban IPM Program Strategy during 1995 for implementation in the ensuing Fiscal Year. This strategy involves the following : the development of "urban" IPM educational materials which include 1) a general, "urban" IPM informational brochure, 2) a "how-to" IPM Kit for Facilities Managers, 3) a consumer-oriented Urban IPM Guide; and, the establishment of a broad-based "urban" IPM Coordinating Council from which to build a consensus-driven, Urban IPM initiative to complement statewide efforts. These efforts are ongoing.

In short, by adapting a total management approach to pest control within urban settings as espoused under IPM, the Department, through the implementation strategy described above, seeks to encourage the use of additional control methods that may allow for the reduction, and/or more selective use, of pesticides. In so doing, concerns over pesticide use and exposure to people and the urban environment within the Commonwealth may be addressed within this context. In addition to these important public benefits, the implementation of a coherent Urban IPM Program would support the Department's other IPM initiatives, namely those in agriculture, by promoting education and information on IPM in general.

The Massachusetts Worker Protection (WPS) Program

Introduction

Within the Department of Food and Agriculture's (DFA) efforts to encourage the agricultural community to comply with the federal Worker Protection Standard (WPS), the following observations have been made:

• state and federal regulatory agencies have increasingly become more customer service orientated.
• a more environmentally conscious constituency is evolving that shares a common goal: to protect the environment from unnecessary contamination while producing food as economically as possible.
• growers are lending themselves to the idea that interaction with government agencies makes good business sense.

Regulators are becoming more involved with the people they govern, thus learning how laws affect the daily commercial practices of growers. Equally as important, growers have taken time out of their busy schedules to attend informational meetings in an effort to become better informed about the laws that have a direct impact on their livelihood.

Amendments to the Standard

The WPS has endured delays as well as changes, but the initial intent of the regulation remains firm: to protect workers on farms, nurseries, greenhouses and forests from occupational exposure to pesticides.

Since the issuance of the 1992 WPS, farmworker groups have expressed an interest in enhancing protection measures, while grower groups, the National Association of State Departments of Agriculture and others have expressed an interest in addressing practical, operational concerns. The EPA received various requests and comments in the form of letters, petitions, and individual and public meetings to address concerns with the WPS. As a result, the Standard was amended. Below is a brief interpretation of the 5 changes proposed and published in the Federal Register on May 3, 1995. To obtain a detailed bulletin on these amendments call the Pesticide Bureau 617/727-3020 extension 130.

Safety Training

Effective January 1, 1996, growers must assure that workers receive basic pesticide safety information before they enter any treated area. Growers will have to provide complete WPS safety training to their workers no more than five days after starting the job on an agricultural establishment where, within the last 30 days a pesticide has been applied or a Restricted Entry Interval (REI) has been in effect.

Low Risk Pesticides

Effective May 3, 1995, EPA allows registrants to begin reducing the current interim WPS REIs from

12 to 4 hours for certain low risk pesticides.

Crop Advisors

Effective July 17, 1995, crop advisors and persons working under their direct supervision are exempt from some WPS requirements. EPA proposed that to be eligible for the exemption, crop advisors should be required to obtain certification or license. **Please Note:** *Massachusetts general laws do not require licensing or certification of crop advisors.*

Early Entry Exception

Effective May 3, 1995, this exception allows workers to perform certain tasks during an REI which if delayed could cause significant economic loss. These tasks must entail minimal contact with pesticide treated surfaces, and may take place for up to 8 hours in a 24-hour period, during an REI.

Early Entry Exception for Irrigation Activities

Effective May 3, 1996, this exception allows workers to perform necessary irrigation activities, which if delayed could cause significant economic loss. These activities must entail minimal contact with pesticide treated surfaces, and may take place for a maximum of 8 hours in a 24-hour period during a REI.

WPS Insight

DFA has been delivering a steady message while conducting WPS outreach activities: that the Department's main objective is to achieve compliance with the regulation through a variety of technical assistance techniques for the purpose of helping to prevent violations.

Workshops where the DFA, Environmental Protection Agency (EPA) Headquarters/Regional as well as agricultural commodity groups, present their goals and concerns have been well attended. Given the opportunity to meet and exchange ideas with the actual people who implement and/or enforce state and federal laws is viewed as mutually beneficial. One example of how this concept is working in this state, is with a grower who volunteered to have a WPS inspection at his greenhouse establishment. His purpose was to identify what areas of compliance were weak and to learn how to correct them. We then proceeded to work with him to coordinate a workshop that would (a.) define to the agricultural industry what is expected during an inspection, (b.) bridge the gap between the agricultural community and various agencies in a effort to develop common goals. What follows is a brief description of what took place during the program.

1995 Worker Protection Standard Greenhouse Field Study

First, a tour of the greenhouse was done for the purpose of reviewing the areas that needed to be in compliance. Different suggestions were then offered with regards to what changes could be made to address each section of the facility that did not meet the requirements of the WPS.

Next, each agency representative made a brief presentation to express their goals and objectives to the greenhouse industry. The participants consisted of state, federal and local government officials,

and University of Massachusetts Cooperative Extension System (MCES). The atmosphere was such that everyone was comfortable voicing their opinions about how the regulation was being administered thus far. Most notably, DFA staff made it a point to emphasize that the regulated community must have access to resources. To gain access, the DFA should be viewed by its constituency as a service station that provides the tools necessary for compliance with the WPS. A short exercise with the audience was done to further highlight this point and training video tapes were awarded to a grower who participated.

The following topics were also addressed:

- State/Federal Roles and Responsibilities
- Update on Massachusetts WPS Implementation
- Status of the Verification Card
- WPS Inspections
- WPS Amendments

Overall, the audience expressed their belief that the WPS makes sense. It limits the contact that workers can have with crops immediately after a pesticide application. In addition, there was a common view that we need to continue to break down some very old barriers that have stood between growers and state officials.

The program ended with a raffle. The winner received a WPS training kit compliments of the Department of Food and Agriculture made available through federal grant funds.

Development of Compliance/Enforcement Guidance Documents

1.] Inspection Check List
2.] Pesticide Application Record List
3.] Geographic Information System [GIS] Potential Mapping Projects:

- Town representation based on TV tracking database
- Town representation of WPS Massachusetts labor force based on availability of statistics from other state/federal agencies e.g. Department of Labor, Dept. of Employment/Training and U.S. Census Bureau
- Overlay map based on agricultural land use information to illustrate percentage of farm land regulated under WPS

Training Courses for Compliance/Enforcement Personnel

1.] March 14-18, 1994 McAllen, Texas WPS Pesticide Inspection Residential Training (PIRT).

2.] July 11-14, 1995 East Lansing, Michigan - Pesticide Regulatory Education Program (PREP) - WPS Implementation and Compliance Assurance.

3.] September 18-22, 1995 Lubbock, Texas WPS PIRT.

Development of Compliance Assistance Materials [Training]

SLA has developed a **"Training Kit"** which includes EPA approved materials. The " Protect Yourself From Pesticides Safety Training for Agricultural Workers" flipchart, worker/handler videos and manuals to use as companions to the videos are some of the items that are included.

The SLA intends to make kits available free of charge as program funding allows it for the purpose of: 1.] encouraging more participation in this area by lessening the burden of the cost of training and 2.] keeping the content of training workers/handlers the same which falls in line with the EPA Training Verification Program where a trainer agrees in part to use materials that are federally approved in order to issue cards.

Train-the-Trainer Workshops

As the result of the Train-the-Trainer workshops not including the 1996 programs there are 900 eligible trainers in Massachusetts.

Training Efforts

1994 - 14 Agricultural Commodity Specific Programs
1995 - 7 " " " "
1996 - 6 Anticipated Workshops

Dates and times for WPS training workshops can be obtained by calling the UMASS Cooperative Extension office 413/545-1044.

WPS Outreach Highlights

1994 Helena Chemical Company Vegetable Growers Annual Meeting

1994 Mass. Roadside Stand & Pick Your Own[PYO] Association Annual Meeting

1994 New England Vegetable Growers Association/CES Meeting

1994 Western Mass. Legal Services/Western Mass. Coalition of Occupational Safety and Health

1995 Mass. Dept. of Employment and Training Annual Growers Meeting

1995 Summer Meeting of the Mass. Fruit Growers Association

1995 Griffin Greenhouse & Nursery Supplies Open House

1995 WPS Greenhouse Field Study Konjoians Greenhouse Andover, MA.

Record Keeping

The Pesticide Use Reporting program, initiated in 1991, has requested and collected pesticide use summaries from all State licensed and certified applicators. Data submission forms and instructions were mailed to each licensed applicator in January for the preceding calendar year. The data collected for each licensed applicator or company included: pesticide product name, EPA registration number, method of application, crop or site treated, and total use amounts.

The available data from the 1993 and 1994 Pesticide Use Report summaries was entered into the Pesticide Data System (PDS) as soon as it became operational (See Section on Pesticide Data System). An annual review of the submitted Reports indicates that most applicators are completing the forms according to directions. However, problems continue with reporting of correct EPA registration numbers, for applied products, and with the units in the amount used.

The Bureau has been unable to assess the degree compliance with the Pesticide Use Report submission requirement due to the report format which allows companies to report use for their employees. Licensed applicators who have not submitted a Pesticide Use Report may be requested to provide the use data prior to issuance of a credential.

Pesticide Data System

In 1991 the Pesticide Bureau developed a plan to integrate all the computer data storage requirements of the Bureau into a unified system which is now called the Pesticide Data System (PDS). The PDS, which was developed by the Executive Office of Environmental Affairs (EOEA) Data Center, is accessed through the local computer network and provides access to the resident data to the entire Pesticide Bureau.

The primary components of the PDS include: the Dealers' Restricted Use Sales Reports, Pesticide Use Report data, and Massachusetts pesticide product registration. The applicator certification program, which is also resident on the same computer platform, will share information regarding the licensing status of dealers and applicators with the PDS programs. In addition, MassGIS is also resident on the VAX platform and will be able to share information with the PDS. Currently all sections of the PDS are operational.

An outgrowth of the PDS is the ability to provide the Pesticide Inspectors with current applicator licensing status and pesticide product registration information, while the Inspectors are in the field. The Department has purchased laptop computers for it's Pesticide Inspectors which will allow them while in the field to obtain information on State licensed pesticide applicators and State registered pesticide products. This information will be updated quarterly.

The PDS system may also interface registered pesticide use and restricted use sales data with aquifer and land use information, which currently exists on ARC/INFO, to produce a system which identifies land areas, their associated pesticide use, and an assessment of the potential impacts of pesticides on ground water and other sensitive sites. This system will also be used as part of the Massachusetts Agricultural Chemical Ground Water Protection Strategy as required by the EPA to identify potential problem areas, maintain a tracking system of controlled pesticide use in Zone IIs for the Public Well Protection Regulations (333 CMR 12.00), and to compile use data on pesticides within the Commonwealth.

Education and Outreach

The following is a lists of Presentations and Training Seminars given by Pesticide Bureau Staff. Other Presentations are covered under program specific sections of this report:

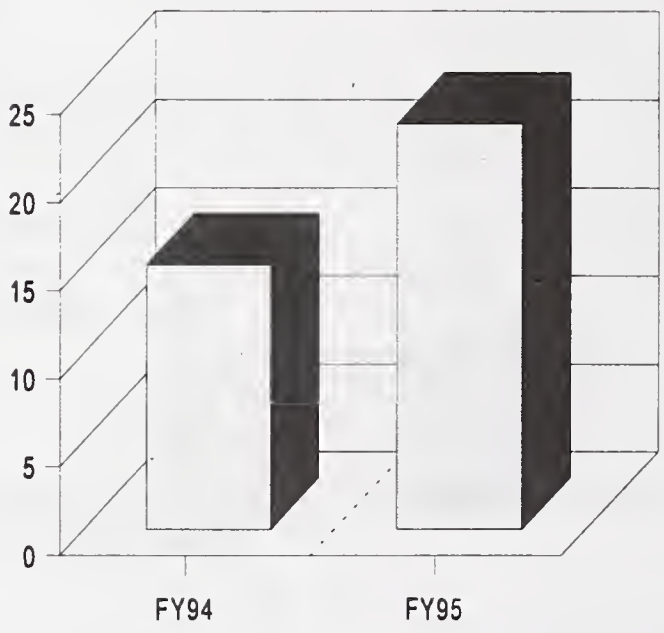
Title	Sponsor(s)	Audience
Basic Pesticide Toxicology	UMASS Extension	Pesticide Applicators
Pesticides and Sensitive Populations	UMASS Extension	Pesticide Applicators
	US EPA	New England State Region I Pesticide Inspectors
Pesticides and Risk Communication	UMASS Extension	Pesticide Applicators
	Mosquito Project Superintendents	Superintendents and Staff
Pesticide Laws and Regulations	UMASS Extension	Pesticide Applicators
	Cape Cod Mosquito Project	Cape Cod Project Staff
	Rotary Club	General Public
	Boston Inspectional Services	Health Inspectors
	Home Depot	Branch Managers
	MA Nurseryman and Landscapers Assoc.	Members
ROW Regulations	MA Highway Districts	Highway District Employees
	Boston and Maine Railroad	Railroad Employees

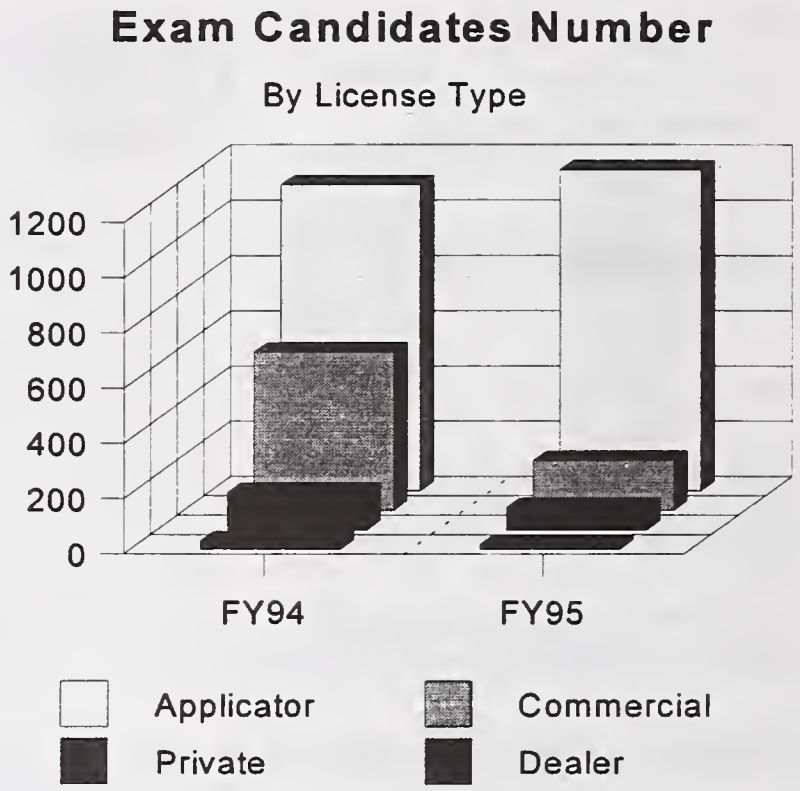
	Massachusetts Turnpike Authority	Employees
Chemical Awareness	Dedham Middle Schools	Students
Protecting Public Health and the Environment with GIS	Nat. Assoc. of Environmental Professionls	Association Members

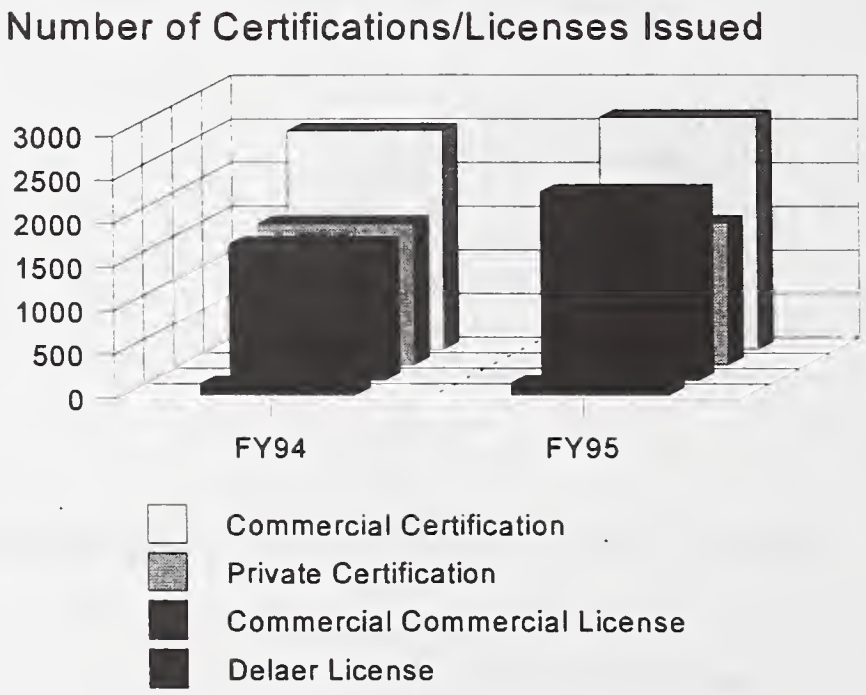
Publications

Title	Format
What to Know Before You Hire Pest Control Professionals	brochure
A Homeowner's Guide to the Safe and Proper Use of Pesticides	brochure
Regulating Pesticides in Massachusetts	brochure
Pesticide Enforcement	brochure
Pesticides and Our Endangered Species: Understanding the Basics #1	brochure
Pesticides and Our Endangered Species: Understanding the Basics #2	brochure
Questions and Answers on Groundwater Protection from Pesticides	brochure
WPS: An Introduction to the Rule	brochure
Integrated Pest Management Helps the Environment (Published in collaboration with USDA and UMASS Extension)	brochure

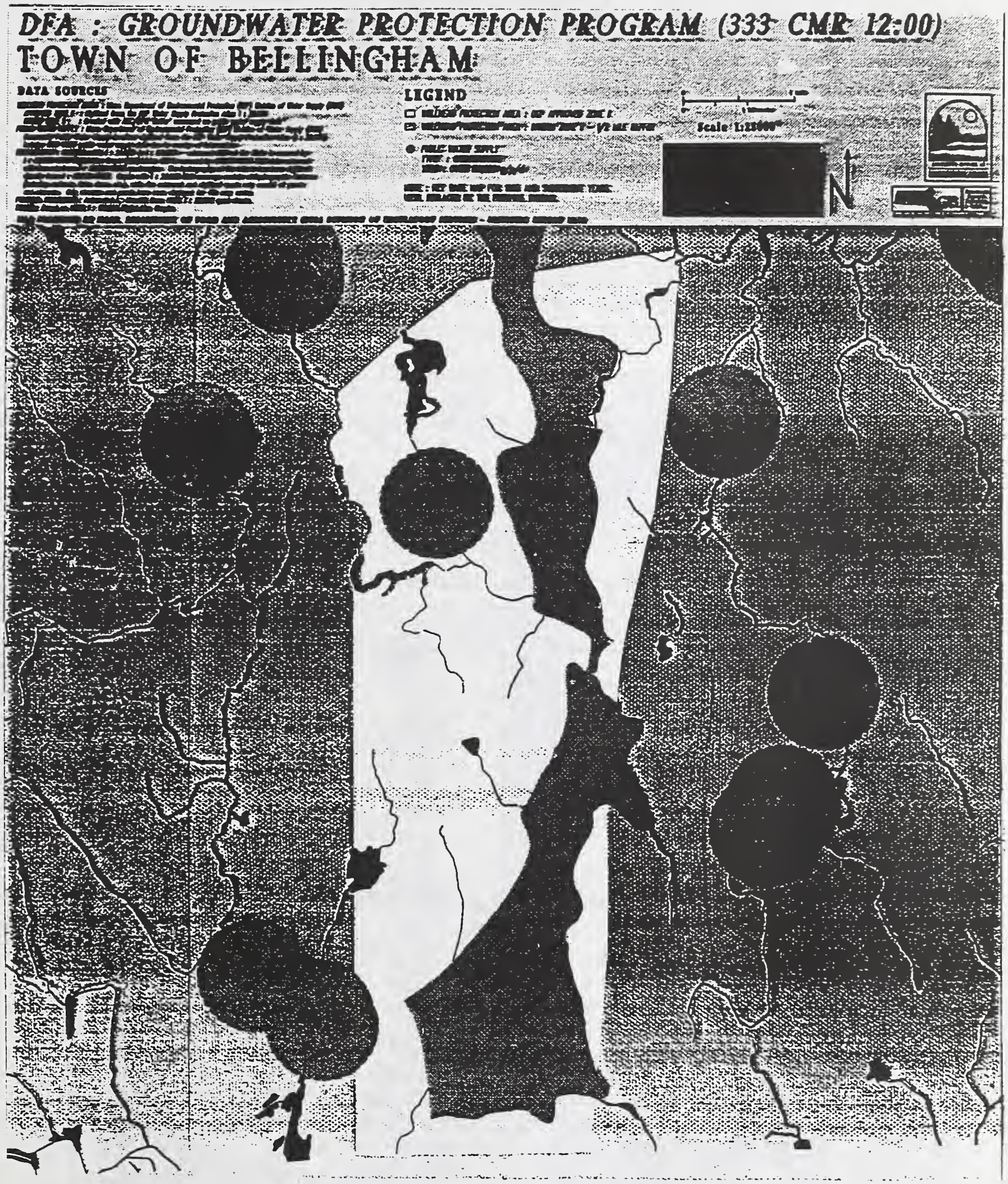
APPENDIX 1


Exam Frequency
25
20
15
10
5
0
FY94
FY95


Exam Candidates Number
By License Type
1200
1000
800
600
400
200
0
FY94
FY95
Applicator
Commercial
Private
Dealer


Number of Certifications/Licenses Issued
3000
2500
2000
1500
1000
500
0
FY94
FY95
Commercial Certification
Private Certification
Commercial Commercial License
Delaer License

APPENDIX 2


DFA : GROUNDWATER PROTECTION PROGRAM (333 CMR 12:00)
TOWN OF BELLINGHAM
DATA SOURCES
LEGEND
N

APPENDIX 3

PESTICIDE BUREAU

Information Bulletin
January 1995

Massachusetts Department of Food Agriculture
100 Cambridge Street, Boston, MA 02202 (617) 727-3020

GROUNDWATER PROTECTION REGULATIONS - 333 CMR 12.00

- On the back of this page is a list of the regulated active ingredients and a list of those towns with ZONE II areas (wellhead protection zones) in them.
- If you plan to apply pesticide products containing any of these regulated active ingredients in one or more of the listed towns, you must determine whether your application sites(s) falls within a Zone II area(s).
- For each listed town where you have an application site, go to the local Board of Health and ask to see the DFA's **groundwater protection map** illustrating these Zone II areas. This map will help you determine if your site is in a Zone II and whether or not you are subject to these regulations.

☛ A number of towns have been added to, or deleted from this list, so don't go by last year's list. This is a new **town list.**

☛ New towns added or towns with new map information are listed in *italics*. For these towns, look for the BASE MAP issued in ★1995★.

☛ For all other towns that are not new or have no changes (non-italics), you do not have to check a new map. Continue to use the BASE MAP issued in ★1994★.

☞ Please note.
Two active ingredients have been added to the list of regulated pesticides - cyproconazole and dimethenamid. A complete list is on the back of this notice. ☜

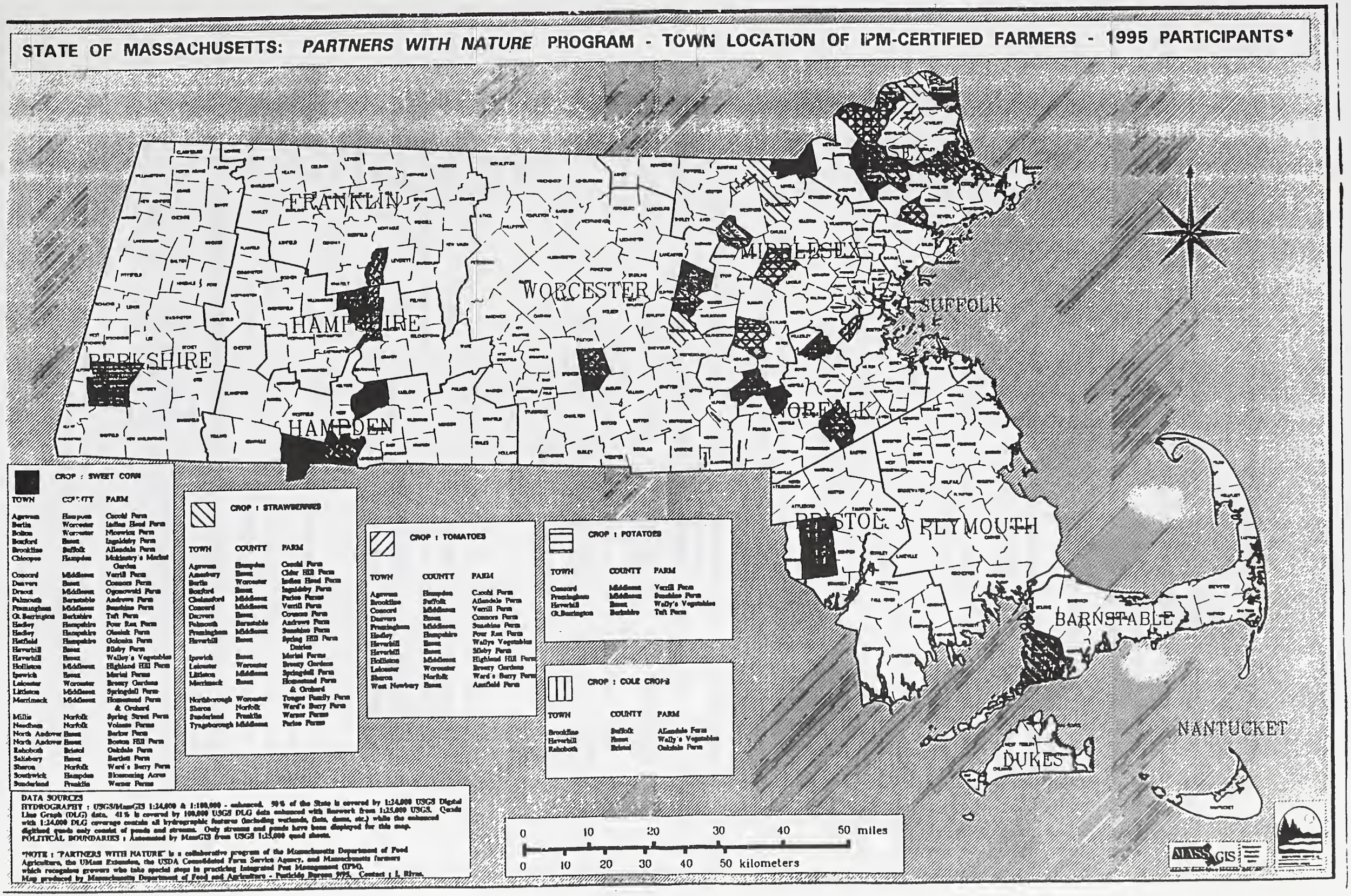
If you have questions on the Groundwater Protection Program call the Pesticide Bureau at ext. 126 or 129.

DFA 1995 GW PROGRAM - TOWNS *WITH* ZONE II AREAS
(Towns in *ITALICS* are new to the list or contain new information)

ABINGTON	COHASSET	HANSON	MILFORD	***PLYMOUTH***	***TRURO***
ACTON	CONCORD	HARVARD	***MILLBURY***	PRINCETON	UXBRIDGE
ACHUSHNET	DANVERS	***HARWICH***	***MILLIS***	RAYNHAM	WALPOLE
AMESBURY	***DARTMOUTH***	HATFIELD	MILTON	READING	***WARE***
AMHERST	DEDHAM	HAVERHILL	MONSON	REHOBOTH	***WAREHAM***
ASHLAND	DENNIS	HINGHAM	MONTAGUE	***ROCHESTER***	WARREN
ATTLEBORO	DIGHTON	HOLBROOK	NANTUCKET	RUSSELL	WAYLAND
AUBURN	DOUGLAS	HOLDEN	NATICK	***SANDWICH***	WEBSTER
AVON	***DOVER***	***HOLLISTON***	NEEDHAM	***SEEKONK***	WELLESLEY
AYER	DUDLEY	HOLYOKE	NEW SALEM	***SHARON***	WENHAM
BARNSTABLE	DUXBURY	HOPEDALE	NORFOLK	SHEFFIELD	WEST BOYLSTON
BARRE	E. BRIDGEWATER	***HOPKINTON***	NORTH ADAMS	SHERBORN	W. BRIDGEWATER
BELCHERTOWN	EASTHAMPTON	HUDSON	***N. ATTLEBORO***	SHIRLEY	***W. BROOKFIELD***
BELLINGHAM	EASTON	HUNTINGTON	NORTH READING	SHREWSBURY	***WEST TISBURY***
BERNARDSTON	***EDGARTOWN***	IPSWICH	NORTHAMPTON	SOUTH HADLEY	WESTBOROUGH
BILLERICA	FAIRHAVEN	KINGSTON	NORTHBOROUGH	SOUTHAMPTON	***WESTFIELD***
BLACKSTONE	***FALMOUTH***	LANCASTER	NORTHBRIDGE	***SOUTHWICK***	WESTFORD
BLANDFORD	***FOXBOROUGH***	LANESBOROUGH	***NORTON***	SPENCER	WESTWOOD
BOURNE	FRAMINGHAM	LEOMINSTER	NORWELL	STERLING	WEYMOUTH
BOXBOROUGH	FRANKLIN	LITTLETON	***NORWOOD***	STOUGHTON	WHATELY
BOXFORD	GARDNER	LOWELL	OAK BLUFFS	STOW	WHITMAN
BOYLSTON	GEORGETOWN	MANSFIELD	ORANGE	SUDBURY	WILLIAMSTOWN
BREWSTER	GRAFTON	MARLBOROUGH	ORLEANS	SUNDERLAND	WILMINGTON
BRIDGEWATER	***GRANBY***	MARSHFIELD	OXFORD	SUTTON	WINCHESTER
BROCKTON	GREENFIELD	MASHPEE	PALMER	SWANSEA	WOBURN
BURLINGTON	***GROTON***	***MATTAPOISETT***	PAXTON	TAUNTON	WORCESTER
CANTON	GROVELAND	MAYNARD	***PEMBROKE***	TEMPLETON	WRENTHAM
CHATHAM	HALIFAX	***MEDFIELD***	***PELHAM***	TEWKSBURY	YARMOUTH
CHELMSFORD	HAMILTON	MEDWAY	PEPPERELL	TISBURY	
CHESHIRE	HANCOCK	MERRIMAC	PETERSHAM	TOPSFIELD	
CHESTER	***HANOVER***	MIDDLEBOROUGH	***PLAINVILLE***	TOWNSEND	

Active Ingredients Regulated Under the Public Drinking Water Protection Regulations

acifluorfen	atrazine	bromacil	cyanazine	***dimethenamid***	fenamiphos	lindane	simazine	PCP
alachlor	bavgon	carbofuran	***cyproconazole***	disulfoton	foloet	MCPA	terbufos	prodazine
aldicarb	bentazon	chlorothalonil	dacthal	diuron	fonofos	metolachlor	metribuzin	


STATE OF MASSACHUSETTS: PARTNERS WITH NATURE PROGRAM - TOWN LOCATION OF IPM-CERTIFIED FARMERS - 1995 PARTICIPANTS*
FRANKLIN
HAMPSHIRE
WORCESTER
MIDDLESEX
ESSEX
SUFFOLK
NORFOLK
BERKSHIRE
HAMPDEN
BRISTOL
PLYMOUTH
BARNSTABLE
NANTUCKET
DUKES
CROP : SWEET CORN
TOWN COUNTY FARM
Agawam Hampden Cicchi Farm
Berlin Worcester Indian Head Farm
Bolton Worcester Miscwicz Farm
Boxford Essex Ingalsbey Farm
Brookline Suffolk Allandale Farm
Chicopee Hampden McKinstry's Market Garden
Concord Middlesex Verrill Farm
Danvers Essex Connors Farm
Dracut Middlesex Ogunowski Farm
Falmouth Barnstable Andrews Farm
Framingham Middlesex Sunshine Farm
Gt.Barrington Berkshire Taft Farm
Hadley Hampshire Four Rax Farm
Hadley Hampshire Olesiuk Farm
Hatfield Hampshire Golonka Farm
Haverhill Essex Sibley Farm
Haverhill Essex Walley's Vegetables
Hollston Middlesex Highland Hill Farm
Ipswich Essex Merisi Farms
Leicester Worcester Breezy Gardens
Littleton Middlesex Springdell Farm
Merrimack Middlesex Homestead Farm & Orchard
Millis Norfolk Spring Street Farm
Needham Norfolk Volante Farms
North Andover Essex Barker Farm
North Andover Essex Boston Hill Farm
Rehoboth Bristol Oakdale Farm
Salisbury Essex Bartlett Farm
Sharon Norfolk Ward's Berry Farm
Southwick Hampden Blossoming Acres
Sunderland Franklin Warner Farms
CROP : STRAWBERRIES
TOWN COUNTY FARM
Agawam Hampden Cicchi Farm
Amesbury Essex Cider Hill Farm
Berlin Worcester Indian Head Farm
Boxford Essex Ingalsbey Farm
Chelmsford Middlesex Parlee Farms
Concord Middlesex Verrill Farm
Danvers Essex Connors Farm
Falmouth Barnstable Andrews Farm
Framingham Middlesex Sunshine Farm
Haverhill Essex Spring Hill Farm Dairies
Ipswich Essex Merisi Farms
Leicester Worcester Breezy Gardens
Littleton Middlesex Springdell Farm
Merrimack Essex Homestead Farm & Orchard
Northborough Worcester Tougas Family Farm
Sharon Norfolk Ward's Berry Farm
Sunderland Franklin Warner Farms
Tyngsborough Middlesex Parlee Farms
CROP : TOMATOES
TOWN COUNTY FARM
Agawam Hampden Cicchi Farm
Brookline Suffolk Allandale Farm
Concord Middlesex Verrill Farm
Danvers Essex Connors Farm
Framingham Middlesex Sunshine Farm
Hadley Hampshire Four Rax Farm
Haverhill Essex Wallys Vegetables
Haverhill Essex Sibley Farm
Hollston Middlesex Highland Hill Farm
Leicester Worcester Breezy Gardens
Sharon Norfolk Ward's Berry Farm
West Newbury Essex Amsfield Farm
CROP : POTATOES
TOWN COUNTY FARM
Concord Middlesex Verrill Farm
Framingham Middlesex Sunshine Farm
Haverhill Essex Wally's Vegetables
Gt.Barrington Berkshire Taft Farm
CROP : COLE CROPS
TOWN COUNTY FARM
Brookline Suffolk Allandale Farm
Haverhill Essex Wally's Vegetables
Rehoboth Bristol Oakdale Farm
DATA SOURCES
HYDROGRAPHY : USGS/MassGIS 1:24,000 & 1:100,000 - enhanced. 59% of the State is covered by 1:24,000 USGS Digital Line Graph (DLG) data. 41% is covered by 100,000 USGS DLG data enhanced with linework from 1:25,000 USGS. Canada with 1:24,000 DLG coverage contain all hydrographic features (including wetlands, flats, dams, etc.) while the enhanced digitized quads only consist of ponds and streams. Only streams and ponds have been displayed for this map.
POLITICAL BOUNDARIES : Automated by MassGIS from USGS 1:25,000 quad sheets.
*NOTE : 'PARTNERS WITH NATURE' is a collaborative program of the Massachusetts Department of Food Agriculture, the UMass Extension, the USDA Consolidated Farm Service Agency, and Massachusetts farmers which recognizes growers who take special steps in practicing Integrated Pest Management (IPM).
Map produced by Massachusetts Department of Food and Agriculture - Pesticide Bureau 1995. Contact : L. Rivas.
0 10 20 30 40 50 miles
0 10 20 30 40 50 kilometers
MASSGIS

APPENDIX 5

MASSACHUSETTS:
FEDERALLY LISTED ENDANGERED WILDLIFE AND PLANT SPECIES BY COUNTY LIST.
TERRESTRIAL AND/OR FRESH-WATER SPECIES OCCURRING CURRENTLY (SINCE 1969),
AND/OR HISTORICALLY (PRIOR TO 1969 : IN BOLD).

SPECIES : Common Name	SPECIES: Scientific Name	GROUP	COUNTY
Bald Eagle	Haliaeetus leucocephalus	Bird	**Barnstable**, Berkshire, **Essex**, Franklin, Hampden, Hampshire, Plymouth, Worcester.
Eskimo Curlew	Numenius borealis	Bird	**Barnstable**, Bristol, Dukes, **Essex**, Nantucket, Plymouth.
Peregrine Falcon	Falco peregrinus	Bird	**Berkshire**, Franklin, Hampden, Hampshire, Suffolk, Worcester.
Piping Plover	Charadrius melodus	Bird	Barnstable, Bristol, Dukes, Essex, Nantucket, Plymouth, Suffolk.
Roseate Tern	Sterna dougallii dougallii	Bird	Barnstable, Bristol, Dukes, Essex, Nantucket Plymouth.
Northeastern Bulrush	Cyperacea-Sedge Family: Scirous ancistrochaetus	Plant	Franklin
Sandplain Gerardia	Scrophulariaceae-Snapdragon Family : Agalinis acuta	Plant	Barnstable, Bristol, Dukes, **Middlesex**, Nantucket, **Worcester**.
Small Whorled Pogonia	Orchidaceae-Orchid Family: Isotria medeoloides	Plant	**Essex**, Hampden, **Hampshire**, Middlesex, Worcester.
Plymouth Red-Bellied Turtle	Pseudemys rubriventris	Reptile	Plymouth
American Burying Beetle	Nicrophorus americanus	Insect	**Barnstable**, **Berkshire**, **Bristol**, Dukes, **Essex**, **Hampden**, **Hampshire**, **Middlesex**, **Nantucket**, **Norfolk**, **Suffolk**.
Northeastern Beach Tiger Beetle	Cicindela dorsalis dorsalis	Insect	**Barnstable**, Bristol, Dukes, **Nantucket**.
Puritan Tiger Beetle	Cicindela ouritana	Insect	**Hampden**, **Hampshire**.
Shortnose Sturgeon	Acipenser brevirostrum	Fish	**Barnstable**, **Essex**, Franklin, Hampden, Hampshire.
Dwarf Wedgemussel	Alasmidonta heterodon	Mussel	**Bristol**, **Essex**, Franklin, **Hampden**, **Hampshire**, **Plymouth**.
Indiana Bat	Myotis sodalis	Mammal	**Berkshire**, **Hampden**, **Worcester**.

* **NOTE** : An additional eleven (11) federally listed species are not included in this table since they represent marine mammals and turtles. Potential pollution of these coastal waters by non-point sources of pesticide contamination is less defined; there is little pesticide applicators can do to avoid non-point pollution other than to strictly apply these chemicals according to label directions, including the recommended rates. These marine species include the following : Loggerhead Turtle, Green Turtle, Hawksbill Turtle, Atlantic Ridley Turtle, Leatherback Turtle, Sei Whale, Blue Whale, Fin Whale, Humpback Whale, Northern Right Whale, Sperm Whale.

TABLES : Prepared by the Massachusetts Department of Food and Agriculture - Pesticide Bureau in support of the Federal EPA's Endangered Species Protection Program. Contact : I. Rivas.
SOURCE : Massachusetts Natural Heritage and Endangered Species Program, 1995 data. Contact : G. Ellason.

APPENDIX 6

"PARTNERS WITH NATURE" PROGRAM 1995 DATA

TOTALS		
CROP	ACRES	FARMS
Sweet Corn	1,143.6	31
Strawberries	85.9	18
Tomatoes	23.1	12
Potatoes	20.7	4
Cole Crops	13.1	3
5 crops	1,286.40 acres	• 68 IPM-Certified individual crops • 37 Farms

COUNTY	ACRES	FARMS
Barnstable	30.5	1
Berkshire	51	1
Bristol	66.4	1
Dukes	0	0
Essex	463.1	12
Franklin	51	1
Hampden	107.6	3
Hampshire	123.7	3
Middlesex	181.5	7
Nantucket	0	3
Norfolk	104.5	3
Plymouth	0	0
Suffolk	21.9	1
Worcester	56.2	4

NOTE : Information compiled by the Massachusetts Department of Food & Agriculture IPM Program, based on 1995 data from the UMass Extension, and the USDA Farm Service Agency - 10/95.

APPENDIX 6 - Cont.

"PARTNERS WITH NATURE" PROGRAM
1995 DATA

COUNTY BREAKDOWN

COUNTY	CROPS	ACRES	FARMS
Barnstable	Sweet Corn	29.5	1
	Strawberries	1	1
	Cole Crops	0	0
	Tomatoes	0	0
	Potatoes	0	0
Berkshire	Sweet Corn	65	0
	Strawberries	0	0
	Cole Crops	0	0
	Tomatoes	0	0
	Potatoes	15	1
Bristol	Sweet Corn	57.7	1
	Strawberries	0	0
	Cole Crops	8.7	1
	Tomatoes	0	0
	Potatoes	0	0
Dukes	Sweet Corn	0	0
	Strawberries	0	0
	Cole Crops	0	0
	Tomatoes	0	0
	Potatoes	0	0
Essex	Sweet Corn	415.9	9
	Strawberries	36.7	6
	Cole Crops	2.4	1
	Tomatoes	7.1	4
	Potatoes	1	1
Franklin	Sweet Corn	45	1
	Strawberries	6	1
	Cole Crops	0	0
	Tomatoes	0	0
	Potatoes	0	0
Hampden	Sweet Corn	105.6	3
	Strawberries	0.5	1
	Cole Crops	0	0
	Tomatoes	1.5	1
	Potatoes	0	0
Hampshire	Sweet Corn	121.5	3
	Strawberries	0	0
	Cole Crops	0	0
	Tomatoes	2.2	1
	Potatoes	0	0
Middlesex	Sweet Corn	140.6	5
	Strawberries	26.7	3
	Cole Crops	0	0
	Tomatoes	9.5	3
	Potatoes	4.7	2
Nantucket	Sweet Corn	0	0
	Strawberries	0	0
	Cole Crops	0	0
	Tomatoes	0	0
	Potatoes	0	0
Norfolk	Sweet Corn	98.5	3
	Strawberries	5	1
	Cole Crops	0	0
	Tomatoes	1	1
	Potatoes	0	0
Plymouth	Sweet Corn	0	0
	Strawberries	0	0
	Cole Crops	0	0
	Tomatoes	0	0
	Potatoes	0	0
Suffolk	Sweet Corn	19.1	1
	Strawberries	0	0
	Cole Crops	2	1
	Tomatoes	0.8	1
	Potatoes	0	0
Worcester	Sweet Corn	45.2	3
	Strawberries	10	3
	Cole Crops	0	0
	Tomatoes	1	1
	Potatoes	0	0

NOTE: Information compiled by the Massachusetts Department of Food & Agriculture IPM Program based on 1995 data from the Cross Connection and the USDA Farm Service Agency - 10/95

4

BUREAU OF ANIMAL HEALTH

Introduction and Summary

The following report serves as an account of the activities of the Bureau of Animal Health. As mandated by Massachusetts General Law, Chapter 129, The Bureau Chief and his authorized agents are charged with preventing the spread of contagious diseases of domestic animals. In this respect, the Bureau enforces applicable statutes, rules, regulations and orders relative to the inspection, examination, quarantine, care or destruction and sanitary disposition of domestic animals affected with or which have been exposed to contagious diseases.

Staffing

The organizational chart of the Bureau is as follows:

Peter D. McArdle, D.V.M.;
Bureau Chief

Clerical Staff

Esther Wegman; Adm. Asst.
Sandra Pepe; Clerk IV
Yvonne Antoon; Clerk III
Auzinda Tavares; Clerk III
Mike Cahill; Rabies Coordinator

Field Staff

Dr. Winthrop Brielman; Veterinary Health Officer II
Dr. Lorraine O'Connor; Veterinary Health Officer I
Thomas Falter; Senior Animal Inspector
Glen Harris; Animal Inspector
Dick Labranche; Animal Inspector
Ed Hageman; Program Coordinator
Mike Bastien; Poultry Inspector
Megan Megrath; Poultry Inspector

The overall size of the Bureau was reduced by one position. After fifty years of dedicated service, Ms. Eleanor Downing retired. Eleanor's contributions to the Commonwealth and the Department were noted by a reception held in her honor which was attended by Governor Weld. Ms. Downing's responsibilities have been distributed among the remaining clerical staff and her position was not filled. This has meant additional work for the staff which responded in good spirit to the added work load. The resiliency of the Bureau's staff has been commendable and I sincerely appreciate their adaptability and willingness to respond to my requests for additional service. I can not overstate my gratitude for their exemplary cooperation.

Interagency Collaboration

In an effort to accomplish its mission of preventing the spread of animal disease, the Bureau works closely with the United States Department of Agriculture (USDA), the Food and Drug Administration (FDA), the Massachusetts Department of Public Health (DPH), the Massachusetts Division of Fisheries and Wildlife (DFW), Municipal Boards of Health, local Animal Inspectors and Animal Control Officers. Additionally, the Bureau is often asked to lend its expertise in animal welfare issues to the M.S.P.C.A. and the Animal Rescue League.

The Bureau participates in eight disease control/eradication programs with the USDA. They are as follows:

1. Cattle Brucellosis
2. Cattle Tuberculosis
3. Swine Brucellosis
4. Swine Pseudorabies
5. Scrapie Eradication Program (Sheep & Goats)
6. National Poultry Improvement Plan
7. Salmonella enteritidis Program
8. Federal School Lunch Program - Poultry Meat Inspection

Brucellosis

Massachusetts is considered Class Free for Cattle Brucellosis and Validated Free for Swine Brucellosis. Surveillance for these diseases included the testing of 4,514 head with 4,468 samples reported as negative. Forty-one samples were read as suspicious and five were unsuitable for testing. Suspicious animals usually result from a residual response in heifers which have been vaccinated for Brucellosis. However, these animals are quarantined to the home farm until their titers revert to negative or the animals are moved directly to slaughter under state/federal supervision. Follow-up tests are performed at that time to either confirm or rule-out the disease. All follow-up tests have not revealed any animals to be infected with the field strain of Brucella abortus.

The Bureau oversaw the vaccination of 6,518 heifers between the ages of four and eight months old for brucellosis with the laboratory Strain 19 line of Brucella abortus. The majority of these calves were vaccinated by "03" consulting veterinarians on a contractual per head fee basis.

A total of 3,170 swine were tested for swine brucellosis. Of that total, 3,143 were tested negative, 4 were reported as suspicious, 7 as reactors and 16 samples were unsuitable for testing. Follow-up investigations on suspicious and reactor swine were determined to be spurious results and the state's Validated Free classification remains unchanged. Please refer to the Brucellosis summary table for test summaries performed on minor species of camelids, deer and horses.

Tuberculosis

Massachusetts is considered Accredited Free for Bovine Tuberculosis. In order to comply with the Pasteurized Milk Ordinance, licensed dairy herds are tested for tuberculosis every third year. The

Bureau works closely with the Department's Dairy Division to coordinate the testing of herds on a rotational basis. Approximately one-third of the dairies are tested each year. The Bureau oversees such testing and relies on the services of "03" consulting veterinarians to perform the majority of the assigned tests. Professional staff from the Bureau perform herd tests on those farms for which no consultants are available.

There were 154 herds tested consisting of 12,658 individual animals tested. Of those tests, 73 were reported as deviate responders. Seventy-one of those were determined to be negative by the comparative cervical test, while two were classified as suspects. These two were later determined to be negative by subsequent comparative cervical tests.

Swine Pseudorabies

Massachusetts is currently classified at Stage III in the Federal Pseudorabies Eradication Program. This places the Commonwealth at a mid-point in achieving Stage V, or Validated Free from Pseudorabies. This viral disease of swine has been targeted by the USDA and major swine producing states as a major hindrance in preventing the United States from being competitive in the international marketplace. Until the U.S. is declared free from this disease, producers will be prohibited from exporting livestock to certain countries. Therefore, the USDA has targeted the year 2000 as the goal for total eradication of this disease in this country.

The Bureau was quite active in performing on farm surveillance for the presence of this disease. Entering FY '95, there was one known positive herd in the state. Through the course of the year, three additional herds were identified. However, repeated testing and removal of infected animals resulted in the elimination of the disease from those three herds. Much progress was also made in the long established infected herd. At the beginning of the fiscal year, infection rates exceeded 50% of certain groups of breeding aged animals on this farm. Aggressive testing and prompt removal of infected animals has dropped the overall herd infection rate to below 10%. It does seem possible that the disease may be eliminated from this herd after many failed attempts made over the last seven years. Much credit has to be given to the entire field staff, with special mention to Dr. O'Connor and Inspectors Harris and Labranche. Drs. David Kluesner and Robert Brady from the USDA have also contributed to the progress achieved in this herd.

We believe that Massachusetts will attain Stage V status by the year 2000. Sixty-nine herds were tested during the federal fiscal year. The testing indicates that the infection rate in Massachusetts is low. Establishment of a State Pseudorabies Board and the placement of enforceable regulations regarding the surveillance and elimination of this disease will further assure that this goal is achieved.

Scrapie

There is little incentive for any sheep producer to participate in this voluntary program. Current federal guidelines prohibit the provision of indemnification to owners for depopulation of infected flocks. To date, only one goat flock is certified to be Free From Scrapie. There is a State Scrapie Board which does meet on an annual basis and there is interest among producers in the establishment of certification, but the current program needs to be refined.

The Food and Drug Administration has also proposed the ban of all sheep and goat products from being used as rendered sources of animal protein used to supplement livestock feeds. This action

would eliminate another avenue of income for producers, thus devaluing their product. This action was brought about by information gathered in Great Britain tracing the origin of Bovine Spongiform Encephalopathy to the feeding of cattle with scrapie infected rendered sheep protein supplement. Both the FDA and the USDA are concerned that such an event could happen in the United States should sheep products be rendered for animal feeds.

National Poultry Improvement Plan

The NPIP is a voluntary program offered to poultry producers. It is aimed at eliminating Salmonella pullorum-typhoid, Mycoplasma gallisepticum and Mycoplasma synoviae from participating flocks. These infectious diseases have a profound negative effect on poultry production when present in affected flocks. The goal is to screen for the presence of the disease and to take corrective action when found.

Please refer to the poultry summary for the overview of the work performed by the Poultry Section of the Bureau.

Federal School Lunch Program

The Bureau's Poultry Inspectors perform poultry meat inspection of products used in the federally subsidized school lunch program. This quality assurance program ensures that poultry meat products arrive at a central receiving depot in proper condition. This work is done in order to prevent possible outbreaks of food borne illnesses. This work is a vital function. National statistics suggest that at least 70 million Americans suffer at least one bout of food borne illness per year. Many outbreaks are attributed to improper storage and handling of poultry products. Bureau inspections have detected variances in meat poultry arriving into the Massachusetts depot. Meat products have been rejected due to partial thawing of frozen product. This work is vital and generally goes unnoticed.

Rabies

The raccoon rabies epizootic which entered Massachusetts in September, 1992 continued to spread in Massachusetts throughout the fiscal year. By the close of FY '95, the epizootic front had entered all counties with the exception of Barnstable and Dukes Counties. Although the epizootic appeared to peak in FY 94, Massachusetts still led all New England states in the total number of positive cases reported during FY '95. Information gathered from other states along the Atlantic seaboard suggests that rebounds in the number of cases will occur as the raccoon population bounces back from the massive die-off caused by the initial wave of the disease's progression through the Commonwealth. Please refer to the maps comparing the extent of the disease at the onset and close of FY '95.

The epizootic fronts have advanced through Bristol and Plymouth Counties in the southeast portion of Massachusetts and in Franklin County in the northwest part of the state. The barrier established by distribution of an experimental oral modified live rabies-vaccinia hybrid virus vaccine which was distributed on both sides of the Cape Cod Canal will be challenged by the epizootic front during FY '96. This experimental study is being conducted by Tufts University School of Veterinary Medicine in cooperation with the Departments of Food and Agriculture, Public Health and the Division of

Fisheries and Wildlife. The goal is to establish a barrier of rabies resistant, vaccinated raccoons along the canal in an attempt to halt the progression of the epizootic onto Cape Cod. The experimental vaccine is packaged in cylinders of fish meal cake which is then distributed by car, foot and aerial drops on both sides of the canal. Assessment of the efficacy of this method of distribution is performed by trapping raccoons and sampling for antibodies produced by ingestion of the vaccine. Initial studies indicate that captured raccoons have taken the bait and responded by producing antibodies. Wildlife experts estimate that several rounds of bait distribution performed several times a year over several years are needed to fully suppress advancement of the disease through a barrier zone.

Prevention of rabies in domestic animals remained a major function of the Bureau of Animal Health in FY '95. The demands are two-fold. The Bureau oversees the proper handling of domestic animals which have been exposed to rabies and also coordinates the oversight of domestic animals which are suspected of having rabies due to infliction of bites, scratches or wounds upon humans or other domestic animals. This is an extremely time consuming function for the Bureau. A full-time Rabies Program Coordinator is devoted to the oversight of rabies prevention. That person, Mr. Mike Cahill, reviews all incoming rabies exposure and quarantine reports, lends assistance to municipal animal inspectors, animal control officers and boards of health. He also works closely with the Department of Public Health's Division of Epidemiology and the Division of Fisheries and Wildlife. Furthermore, the Bureau Chief and Veterinary Health Officers devote considerable time to this program. They provide professional support and often intervene when their level of veterinary knowledge is required.

Rabies is an emotional disease which tears at the public in many directions. The victim of an animal attack is faced with the fear of contracting the disease, the pain of the attack compounded with the pain of post-exposure therapy and the cost of such therapy. To the animal owner whose pet has attacked another person or has been exposed to rabies by contact with a wild animal, the disease is an inconvenience and an intrusion on their right to own and keep an animal. Many scenarios have evolved where the Bureau must intercede and protect the public from the spread of rabies. At times it has been to the detriment of an animal owner, resulting in the humane destruction of their animal for the purpose of rabies testing or due to its unvaccinated status coupled to an exposure with a confirmed rabid animal. At other times the Bureau has sided with the animal owner against the wishes of the victim demanding immediate destruction and testing of the animal. In all cases, the facts are weighed out by the professional staff and decisions are made based upon risk assessment. This can be time consuming and involves close communications with all involved parties. As mentioned above, it can be quite emotional and often results in at least one party being dissatisfied with the outcome. Animal owners have disobeyed quarantine orders, animals have been secreted away, owners have refused to surrender the remains of animals which have died while under quarantine for suspicion of or exposure to rabies. Such cases usually require the issuance of an enforceable order by the Bureau Chief accompanied by police assistance at the animal owner's premise. This is not enjoyable work and the performance of such tasks has weighed heavily upon those performing it. They must constantly remind themselves of their duty and initiate actions based upon risk assessment and management. To this end, the Bureau is to be commended for responding to the challenge. It has required a modicum of diplomacy, compassion and a sense of mission to perform this demanding work.

Miscellaneous Topics

Enclosed are the vital statistics compiled by the Bureau during FY '95. Some demand comment. Comparisons with FY '94 indicate a dip in the animal census based upon reports generated by the annual inspections conducted by municipal animal inspectors. The drop is attributed mainly to a decrease in the total number of cattle counted. This seems reasonable based on the general trend in the diminution of the dairy industry in Massachusetts. However, one must take caution in this census due to a high degree of variability of reporting which occurs from year to year.

Massachusetts remains a clearing house for animals in New England and eastern New York state. Over 69,000 animals moved through the commercial auction houses operating in Massachusetts. The majority of these animals are destined for out of state slaughter, usually Pennsylvania, Tennessee or Kentucky depending on the species of animal. A void of accessible slaughter facilities now exists in all of New England. This relates to a decline in overall livestock production, tougher federal standards for the operation of slaughter houses, and shifts in consumer demands for meat products. Slaughter facilities are a necessary part of livestock production. Producers need local avenues for the diversion of unproductive animals. These may be animals which have suffered injuries or have been afflicted with acute illnesses. Long distance shipment for slaughter is not possible and without a local outlet, the producer loses any residual salvage value the animal may have had. This is not a trivial matter and is one additional factor which makes it difficult for the local producer to maintain a positive balance sheet.

Imports and exports into and from Massachusetts remained fairly similar to those in FY '94. Massachusetts has consistently imported in excess of 10,000 dogs per year for the last several years. Many of these dogs are racing greyhounds which enter racing kennels at the Commonwealth's two operating greyhound tracks. However, the majority of these dogs enter the commercial pet industry by way of licensed pet shops. They enter Massachusetts at approximately eight weeks of age after being trucked or flown in from the Midwest. Leading states which sent dogs into Massachusetts were Iowa, Kansas and Missouri accounting for over 7,500 of the 11,172 dogs which entered Massachusetts. These states are often referred to as "puppy mill" states. The commercial dog industry is big business in Massachusetts. The combination of an naive affluent consumer population which demands AKC purebred dogs feeds this industry. Conservatively, the average price of a purebred dog sold in Massachusetts is in excess of $400.00. Many consumer complaints generated from the sale of dogs involve health issues. Eight week old puppies are quite prone to the stresses of long distance shipping. The Bureau attempts to protect the consumer by enforcing the Department's pet shop regulations. In this light, the Department has updated this regulation to improve standards for facilities to house these animals, provide adequate animal care, husbandry and veterinary oversight for the purpose of protecting the health and welfare of the animals. The updated regulation will go into enforcement during FY '96.

Closure

This will be my second and final Annual Report submitted as the Chief of the Bureau of Animal Health. I have returned to the private sector after three fulfilling years in public service as an employee of the Department of Food and Agriculture. I wish to personally thank Commissioner Healy for the support he has shown me. Additional thanks go to Mr. David Sheldon, Dr. Winthrop E. Brielman, Mr. Jim Hines, Mr. Tom Fitzgerald and Ms. Esther Wegman for their assistance and wise advice bestowed upon me over this period of service. Finally, Thanks to the rest of the Animal

Health Staff, Dr. Lorraine O'Connor, Sandy Pepe, Yvonne Antoon, Auzinda Tavares, Mike Cahill, Ed Hageman, Mike Bastien, Megan Megrath, Tom Falter, Dick Labranche and Glen Harris. Your service was sincerely appreciated by me.

Peter D. McArdle, D.V.M.
Chief, Bureau of Animal Health

Brucellosis

The Brucellosis program has been carried out in accordance with Chapter 527, Acts of 1956. During the fiscal year 1995 no reimbursement was made to owners.

Listed below is a tabulation of results of laboratory examination of blood samples from cattle, swine, goats, horses, llamas/alpacas, camels, deer and reindeer.

	NEGATIVE	SUSPICIOUS	REACTORS	OTHERS*	TOTALS
Cattle	4,468	41	0	0	4,514
Swine	3,143	4	4	16	3,170
Goats	757	2	1	11	771
Horses	2				2
Alpacas/Llamas	108				108
Deer	79				79
Camels	4				4
Reindeer	3				3
					0
TOTALS	8,564	47	8	32	8,651

*Hemolyzed, no serum, broken tube

CALFHOOD VACCINATION - STATE'S EXPENSE

Herds	846
Head	6,518

Bovine Tuberculosis

There were one hundred fifty-four (154) tuberculin herd tests, to which twelve thousand five hundred sixty-eight (12,658) individual animals were tested. There were seventy-three (73) deviates. Seventy-one deviates (71) were negative to comparative cervical retest and two (2) deviates were positive to the comparative cervical retest.

Tuberculin tests are conducted by State and Federal Accredited Veterinarians under State and Federal Cooperative Plan for the establishment of Tuberculosis Free Herds and the eradication of Bovine Tuberculosis.

Effective January 10, 1984, Massachusetts has attained Accredited-Free Status for Bovine Tuberculosis.

Caprine Tuberculosis

Under the present Tuberculosis testing program, goats are tested for tuberculosis at the owner's request every three years, the same as cattle.

Among those goats Tuberculosis tested this year, there were six (6) deviates. All six (6) deviates were negative to comparative cervical retest.

FY95 - 03 SUBSIDIARY				
	TB	**VACC**	**BLOOD**	**TOTAL**
July	$0.00	$0.00	$0.00	$0.00
August	$0.00	$482.00	$0.00	$482.00
September	$468.00	$1,167.00	$0.00	$1,635.00
October	$0.00	$672.00	$0.00	$672.00
November	$0.00	$1,755.00	$0.00	$1,755.00
December	$2,028.00	$1,981.00	$0.00	$4,009.00
January	$331.01	$1,739.00	$0.00	$5,054.00
February	$8,163.00	$2,460.00	$0.00	$10,623.00
March	$11,439.00	$2,868.00	$0.00	$14,307.00
April	$6,837.00	$1,927.00	$0.00	$8,764.00
May	$1,863.00	$2,601.00	$0.00	$4,464.00
June & Accounts Payable	$849.00	$2,250.00	$0.00	$3,099.00
TOTAL	$34,962.00	$19,902.00	$0.00	$54,864.00
FAIRS		$1,140.00		
MISC.		$0.00		

Poultry Section Report

As FY95 came to a close, it was apparent that the poultry section of the Bureau of Animal Health had come to terms with the down-sizing which all government agencies have faced.

Thanks to the efficiencies of the poultry staff, we have maintained the National Poultry Improvement Plan programs of Salmonella pullorum testing, Mycoplasma gallisepticum, Mycoplasma synoviae sampling and Salmonella enteriditis.

We continue to meet the requirements of the contract which Massachusetts signs with the U.S.D.A. for egg surveillance inspections and the school lunch inspection program.

In an attempt to maintain the highest standards of disease control, all imports to and exports from Massachusetts are recorded in accordance with the U.S.D.A. Veterinary Service form 9-3. Additionally, the poultry shows and state fairs are visited by inspectors for disease control and compliance with N.P.I.P.

Additional staffing will be required if we are to reach the higher standards, for retail store egg inspection and institution inspections, which we had once met.

The Commonwealth of Massachusetts has fewer participants for many of the other programs which the poultry section oversees. Most of the commercial hatcheries have relocated to other states, leaving only the two Hardy hatcheries located in Massachusetts. We have also seen a reduction in the numbers of commercial egg production farms.

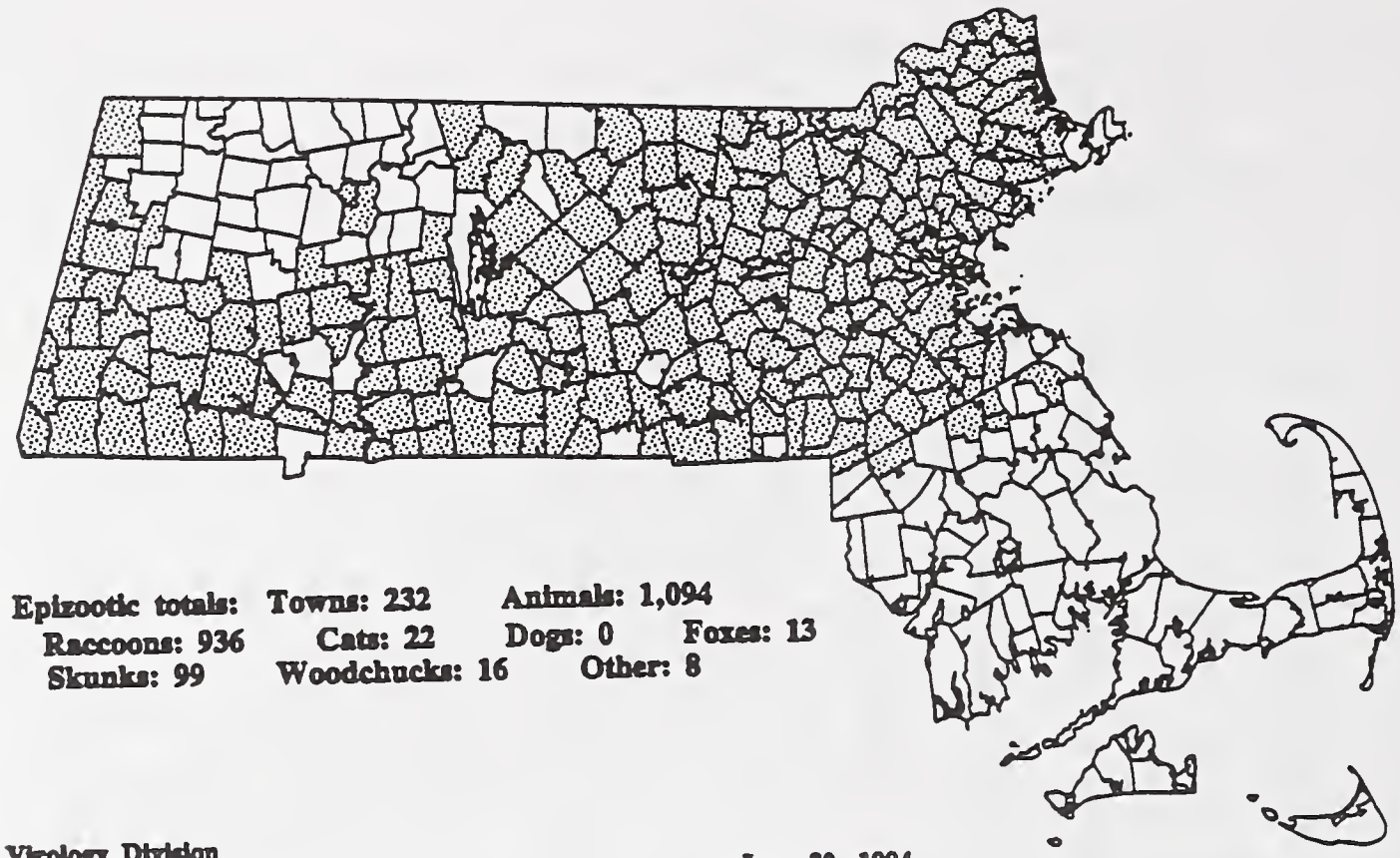
The poultry section remains committed to provide the services required by the poultry industry, which remains here in Massachusetts, and to the quality of these same products for our consumers.

Poultry Activity Report

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	Total
Pollurum-Thyphoid Samples	541	1980	583	993	145	903	7240	5828	625	481	513	309	20141
M.G. Samples Taken	422	51	85	488	199	100	550	799	625	288	175	234	4016
M.S. Samples Taken	422	107	85	307	199	100	550	500	217	358	44	207	3096
S.E. Monitor Barn Visits	0	0	0	2	1	0	1	0	1	3	2	2	12
Exported Chicks Female	16025	26325	20117	20100	20100	20272	17450	23300	300	1000	720	5638	171347
Exported Chicks Male	1451	650	100	105	100	150	0	266	200	1000	500	1686	6208
Exported Hatching Eggs	3240	0	0	0	300	200	0	0	0	0	0	0	3740
Poultry Exhibitions	4	4	13	2	2	0	2	0	0	0	1	3	31
USDA Shell Egg Surv. Inspection	6	1	5	5	7	6	6	10	1	12	3	3	65
USDA School Lunch Inspec.	0	1	2	2	4	2	1	5	3	0	0	0	20
Retail Store Inspec. Visits	9	0	9	0	57	17	12	21	12	0	0	12	148

Retail Store Violations : Fresh	0	0	1	0	0	0	0	0	0	0	0	0	1
Retail Store Violations : Size	0	0	0	0	0	1	0	0	0	0	0	2	3
Retail Store Non-Violations	18	0	18	0	114	33	24	42	24	0	0	24	297
State Institutions Inspected	0	0	0	0	0	1	2	1	0	0	0	2	6
State Institutions Cases Inspected	0	0	0	0	0	1	3	4	0	0	0	3	11
State Institutions Cases Rejected	0	0	0	0	0	0	0	1	0	0	0	0	1

Mid-Atlantic Raccoon Strain of Rabies Virus in Massachusetts
September 16, 1992 to Date

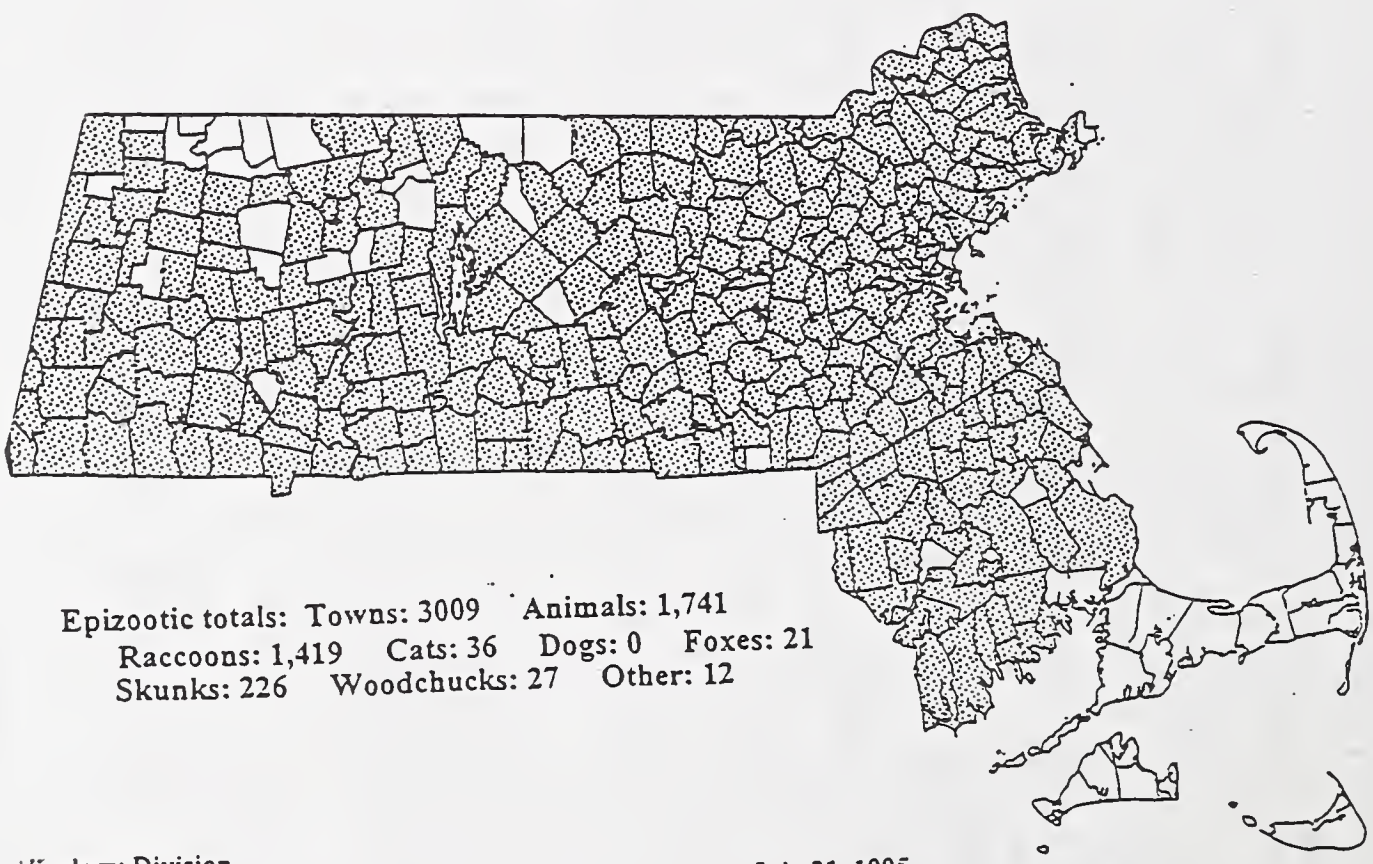


Epizootic totals: **Towns: 232** **Animals: 1,094**
Raccoons: 936 **Cats: 22** **Dogs: 0** **Foxes: 13**
Skunks: 99 **Woodchucks: 16** **Other: 8**

Virology Division
Mass. DPH

June 30, 1994

Mid-Atlantic Raccoon Strain of Rabies Virus in Massachusetts
September 16, 1992 to Date



Epizootic totals: Towns: 3009 Animals: 1,741
Raccoons: 1,419 Cats: 36 Dogs: 0 Foxes: 21
Skunks: 226 Woodchucks: 27 Other: 12

Virology Division
Mass. DPH

July 31, 1995

RABIES EXPOSURE AND QUARANTINES FOR FISCAL YEAR 1995

Exposure Categories:
Category 1 - Direct contact with a confirmed rabid animal
Category 2 - Direct contact with a suspect rabid animal
Category 3 - A wound of unknown origin
Category 4 - Close proximity to a confirmed rabid animal

Quarantines for Exposure Categories
Category 1 - Current Vaccinate = 45 Days, Nonvaccinate = Euthanasia, or 6 Months
Category 2 - Current Vaccinate = 45 Days, Nonvaccinate = Euthanasia, or 6 Months
Category 3 - Current Vaccinate = 45 Days, Nonvaccinate = Euthanasia, or 6 Months
Category 4 - Current Vaccinate = 45 Days, Nonvaccinate = 6 Months

Total Number of Animals Exposed or potentially Exposed to Rabies = 3987

Exposure Category	Total Exposed	Current Vaccinates	Nonvaccinates
1	591	416	175
2	444	396	48
3	2662	1642	1020
4	290	159	131

Total Number of Animals Euthanized = 224

Category	Animals Euthanized	Current Vaccinates	Nonvaccinates
1	112	9	103
2	15	2	13
3	46	8	38
4	51	1	50

* Quarantine numbers for unvaccinated animals may be incomplete due to reporting procedure

Fiscal Year 1995 Possible Rabies Exposure

Exposures Categorized by Animal Exposed

Animal Exposed	Category 1 Vaxed	Category 1 Not Vaxed	Category 2 Vaxed	Category 2 Not Vaxed	Category 3 Vaxed	Category 3 Not Vaxed	Category 4 Vaxed	Category 4 Not Vaxed	Total
Cat	14	43	215	27	1,336	905	24	69	2,633
Cow	0	9	0	0	0	1	4	2	16
Dog	396	112	179	15	306	112	106	51	1,277
Goat	0	0	0	2	0	2	0	2	6
Horse	6	3	1	0	0	0	13	1	24
Rabbit	0	8	0	0	0	0	0	6	14
Sheep	0	0	0	4	0	0	12	0	16
* Wolf Hybrid	0	0	0	1	0	0	0	0	1

* The Bureau of Animal Health was not notified until the end of the quarantine

Fiscal Year 1995 Animals Euthanized

Euthanized Animals Categorized by Type of Animal Exposed

Animal Exposed	Category 1		Category 2		Category 3		Category 4		Total
	Vaxed	Not Vaxed	Vaxed	Not Vaxed	Vaxed	Not Vaxed	Vaxed	Not Vaxed	
Cat	1	33	1	10	7	37	0	42	131
Cow	8	0	0	0	0	0	0	0	8
Dog	8	54	1	3	1	1	1	8	77
Goat	0	0	0	0	0	0	0	0	0
Horse	0	0	0	0	0	0	0	0	0
Rabbit	0	8	0	0	0	0	0	0	8
Sheep	0	0	0	0	0	0	0	0	0

Fiscal Year 1995 Domestic Animal Bites & 10 Day Quarantines

Biting Animal	Number of Animals Quarantined	Number of Animals Released	Number of Animals Euthanized
Dog	3,942	3,914	28
Cat	708	690	18
Cow	1	0	1
Gerbil	1	1	0
Hamster	8	7	1
Horse	2	2	0
Mouse	1	1	0
Pig	3	3	0
Rabbit	3	3	0
Rat	5	4	1
TOTAL	4,674	4,625	49

SALES/OR AUCTION BARNS

ANIMALS	Cattle	Calves	Swine	Sheep/ Goats	Horses	Total
Quarantine Station at Littleton	10,554	9,523	1,140	1,668	50	22,935
Camara's NE Comm. Auction	3,070	1,263	2,737	2,811	3	9,884
Northampton Cooperative Auction	3,169	7,479	7,353	12,165		30,166
Crowley's Commission Sales					4,447	4,447
Peila Bros.	2,204					2,204
TOTALS	18,997	18,265	11,230	16,644	4,500	69,636

3,804 cattle were reported by Licensed Cattle Dealers as bought and sold in fiscal year 1995.

BOVINE IMPORTS

Canada	144	New Jersey	35
Connecticut	691	New York	989
Florida	3	North Carolina	1
Illinois	1	Pennsylvania	105
Iowa	1	Tennessee	2
Kentucky	11	Vermont	687
Maine	1,694	Virginia	186
Maryland	2	Wisconsin	5
New Hampshire	384	Wyoming	2
	TOTAL 4,943		

A Total of 290 Permits for bovines entering the State of Massachusetts were issued

ANIMALS EXPORTED from MASSACHUSETTS
(Other than Small Animals)

DESTINATION	ALPACAS	AVIAN	CAMEL	CATTLE	DEER	GOATS	LLAMAS	SHEEP	SWINE	TOTALS
Alabama				1						1
Alaska										0
Arizona										0
Arkansas										0
California		1		4					9	14
Colorado						2				2
Connecticut	3			295			6	4	16	324
Delaware				1						1
Florida				171		1				172
Georgia				20						20
Hawaii										0
Iowa								1		1
Idaho				41						41
Illinois										0
Indiana				4			1			5
Kansas				80						80
Kentucky				4						4
Louisiana						67				67
Maine				73			1			74
Maryland				3						3
Michigan										0
Minnesota										0
Mississippi										0
Missouri				70				11		81
Montana								1		1
Nebraska							9			9

DESTINATION	ALPACAS	AVIAN	CAMEL	CATTLE	DEER	GOATS	LLAMAS	SHEEP	SWINE	TOTALS
Nevada										0
New Hampshire				146			2	5	27	180
New Jersey							2			2
New Mexico										0
New York				994	3	2	3	34		1036
N. Carolina										0
N. Dakota										0
Ohio		15		22	72		1	8		118
Oklahoma	5			9			5			19
Oregon										0
Puerto Rico		21								21
Pennsylvania	3			1225		1	3	1	59	1292
Rhode Island			7	101		25	6	13	8	160
S. Carolina										0
S. Dakota										0
Tennessee						1		4		5
Texas							4			4
Utah										0
Vermont				1206	3		11			1220
Virginia				197			6		54	257
Washington						1		1		2
W. Virginia				2						2
Wisconsin				17		1		1	4	23
Wyoming										0
TOTALS	11	37	7	4686	78	101	60	84	177	5241

ANIMALS ENTERING MASSACHUSETTS
(Other than Cattle)

STATE	BIRDS	CATS	DOGS	GOATS	LLAMAS	PRIMATES	RABBITS	RODENTS	SHEEP	SWINE	ZOO ANIMALS	TOTALS
ALABAMA		3	37			2						42
ALASKA		26	66									92
ARIZONA	3	105	203								4	315
ARKANSAS		5	14									19
CALIFORNIA	138	258	285	1	1		4		2		7	696
COLORADO		85	237	1			2				1	326
CONNECTICUT		5	1	3						1		10
DELAWARE						1						1
FLORIDA	80	102	445	2	0	144		74			34	881
GEORGIA												0
HAWAII												0
IOWA		181	2889					1		1		3,072
IDAHO		8	21						3	0		32
ILLINOIS	10	26	37					12	14			99
INDIANA	1	23	42	9		2		12		42		131
KANSAS	101	32	2377					1				2,511
KENTUCKY												0
LOUISIANA	2	5	14			18						39
MAINE			7							198		205
MARYLAND	6		2		3				16	1	1	29
MICHIGAN	2	24	108	2	3		2		24			165
MINNESOTA	1	60	771					1			1	834
MISSISSIPPI	1	2	21				20			1		45
MISSOURI	11	43	1534						1	2		1,591
MONTANA	1	3	31									35
NEBRASKA		48	384								10	442
NEVADA	2	38	59			1		1				101
NEW HAMPSHIRE			4	13	1				1	58		77
NEW JERSEY												0
NEW MEXICO		22	39									61
NEW YORK	5		2	10		4			168	286	14	489

STATE	BIRDS	CATS	DOGS	GOATS	LLAMAS	PRIMATES	RABBITS	RODENTS	SHEEP	SWINE	ZOO ANIMALS	TOTALS
N. CAROLINA	7					1		97		9		114
N. DAKOTA		13	109									122
OHIO				1						2	3	6
OKLAHOMA	1	5	392						50			448
OREGON	1	67	90	4			4				2	168
PUERTO RICO	22		36									58
PENNSYLVANIA	2	93	314		3	80	10		13	89		604
RHODE ISLAND			2	1					3		1	7
S. CAROLINA	43	42	58			55					24	222
S. DAKOTA	1	2	64						6	106		179
TENNESSEE	4	28	98				1					131
TEXAS	1	4	23	1		84					4	117
UTAH		12	38				1					51
VERMONT	1		4		2				9		1	17
VIRGINIA	2	23	56						3	41		125
WASHINGTON	18	111	127					20	1		1	278
WASHINGTON D.C.		1										1
W. VIRGINIA			11									11
WISCONSIN	2	84	105							625	106	922
WYOMING	5	1	15								1	22
TOTALS	474	1590	11172	48	13	392	44	219	314	1462	215	15943

COUNTRIES

COUNTRY	BIRDS	SHEEP	SWINE					RODENTS				TOTALS
CANADA	2040	10	259					4				2313
ENGLAND	200											200
NETHERLANDS	106											106
TOTALS	2346	10	259					4	0	0		2619

HORSES IMPORTED into MASSACHUSETTS

STATE	HORSES	CERTIF.	STATE	HORSES	CERTIF.
ALABAMA	1	1	NEBRASKA		
ALASKA			NEVADA	5	3
ARIZONA	2	2	NEW HAMPSHIRE	446	128
ARKANSAS			NEW JERSEY	71	33
CALIFORNIA	22	18	NEW MEXICO	1	1
COLORADO	7	5	NEW YORK	100	63
CONNECTICUT	38	34	NORTH CAROLINA	17	15
DELAWARE			NORTH DAKOTA	11	2
FLORIDA	602	249	OHIO	11	7
GEORGIA	3	2	OKLAHOMA	36	7
HAWAII			OREGON		
IDAHO	2	2	PENNSYLVANIA	45	23
ILLINOIS	9	7	PUERTO RICO		
INDIANA	5	3	RHODE ISLAND	2	1
IOWA	2	2	SOUTH CAROLINA	32	15
KANSAS	1	1	SOUTH DAKOTA		
KENTUCKY	22	21	TENNESSEE	6	6
LOUISIANA			TEXAS	29	13
MAINE	70	52	UTAH	2	2
MARYLAND	13	11	VERMONT	99	59
MICHIGAN	26	8	VIRGINIA	33	33
MINNESOTA	18	4	WASHINGTON	5	2
MISSISSIPPI	1	1	WEST VIRGINIA	6	4
MISSOURI	11	5	WISCONSIN	18	3
MONTANA	11	6	WYOMING	4	2

TOTAL HORSES	1845
TOTAL CERTIFICATES	856

COUNTRIES	HORSES	CERTIF.
ARGENTINA	4	1
AUSTRIA	1	1
BERMUDA	1	1
CHILE	1	1
CANADA	130	103
ENGLAND	18	10
FRANCE	1	1
IRELAND	1	1
MEXICO	3	1
NETHERLANDS	2	2
GERMANY	4	2
SWITZERLAND	1	1
TOTALS	167	125

HORSES EXPORTED from MASSACHUSETTS

STATE	HORSES	CERTIF.	STATE	HORSES	CERTIF.
ALABAMA	4	3	NEBRASKA		
ALASKA			NEVADA		
ARIZONA	4	3	NEW HAMPSHIRE	161	96
ARKANSAS	1	1	NEW JERSEY	59	41
CALIFORNIA	11	8	NEW MEXICO	1	1
COLORADO	7	6	NEW YORK	210	139
CONNECTICUT	17	15	NORTH CAROLINA	21	11
DELAWARE			NORTH DAKOTA	10	3
FLORIDA	348	198	OHIO	20	9
GEORGIA	9	4	OKLAHOMA	18	8
HAWAII			OREGON	2	2
IDAHO			PENNSYLVANIA	54	33
ILLINOIS	8	6	PUERTO RICO		
INDIANA	1	1	RHODE ISLAND	3	2
IOWA	1	1	SOUTH CAROLINA	35	18
KANSAS	7	4	SOUTH DAKOTA		
KENTUCKY	27	17	TENNESSEE	1	1
LOUISIANA	7	2	TEXAS	22	9
MAINE	25	15	UTAH	1	1
MARYLAND	19	15	VERMONT	299	97
MICHIGAN	12	5	VIRGINIA	48	34
MINNESOTA	2	1	WASHINGTON	2	2
MISSISSIPPI	1	1	WEST VIRGINIA	2	2
MISSOURI	3	2	WISCONSIN		
MONTANA	15	7	WYOMING		

TOTAL HORSES 1498
TOTAL CERTIFICATES 824

ANNUAL INSPECTION OF NEAT CATTLE, HORSE, SWINE, SHEEP, AND GOATS

In accordance with Section 10, Chapter 129 of the General Laws the annual inspection of neat cattle, horses, swine, sheep and goats and of the premises where kept was completed.

Reports received from two hundred fifty seven of the three hundred fifty-one (351) cities and towns in the Commonwealth of Massachusetts showed that inspection indicated the following information.

COUNTIES	CATTLE HERDS	NEAT CATTLE	HORSES & PONIES	SWINE HEADS	SWINE HERDS	SHEEP	GOATS
Barnstable	6	65	584	17	12	90	77
Berkshire	236	7,790	1,598	297	38	802	241
Bristol	185	5,303	1,015	1,489	54	508	639
Dukes	18	236	313	41	7	343	50
Essex	86	1,921	2,838	295	39	527	342
Franklin	213	7,009	789	303	29	758	131
Hampden	68	1,156	508	141	9	180	126
Hampshire	158	6,534	1,179	1,179	23	1,274	111
Middlesex	103	1,859	2,286	2,208	35	1,274	346
Nantucket	7	13	68	1	1	3	50
Norfolk	51	780	1,418	180	29	508	127
Plymouth	86	1,222	1,472	2,119	44	327	192
Suffolk	0	0	57	0	0	0	0
Worcester	372	11,257	3,300	3,987	136	1,410	1,728
TOTALS	1,548	45,345	17,471	12,218	452	8,007	4,176

Of the total number of dairy cattle inspected, thirty-five thousand thirty (35,030) were grade and purebred cows, heifers and calves; six hundred ninety-five (695) were grade and purebred bulls and steers.

Of the total number of beef cattle inspected, eight thousand one hundred seventy-three (8,173) were grade and purebred cows, heifers and calves; one thousand four hundred forty-seven (1,447) were grade and purebred bulls and steers.

Of the total number of poultry inspected there were three hundred twenty-five thousand three hundred seventy (325,370) chickens, turkeys, ducks and geese.

Also, there were many miscellaneous animals such as donkeys, burros, mules, llamas, buffalo and deer.

REVENUE PRODUCING PROGRAMS

Permit to Feed Garbage to Swine	$ 305.00
Operating a Pet Shop	$ 43,602.00
Operating a Guard Dog Business	$ 150.00
Bovine Dealers	$ 290.00
Bovine Dealers Decals	$ 175.00
Porcine Dealers	$ 80.00
Porcine Dealers Decals	$ 55.00
Shell Egg Surveillance	$ 10,281.19
TOTAL	$ 54,938.19

The above figures are from cash book receipts (monies actually received in fiscal year 1995 and may not correlate directly with licenses issued (see individual program reports) since many licenses require preliminary inspections or requirements.

PERMITS, LICENSES & VEHICLE DECALS ISSUED

Permit to Feed Garbage to Swine (section 14B of Chapter 129)	31
License to Deal in Porcine Animals (section 39 of Chapter 129)	8
License to Deal in Bovine Animals (section 39 of Chapter 129)	28
License to Operate a Guard Dog Business (section 39B of Chapter 129)	3
License to Operate a Pet Shop (section 39A of Chapter 129)	249
Bovine &Porcine Decals (section 40 of Chapter 129)	34 & 11

EQUINE INFECTIOUS ANEMIA
REPORT OF COGGINS TESTS

THE TOTAL NUMBER OF NEGATIVE EIA'S WAS	11,616
THE TOTAL NUMBER OF POSITIVE EIA'S	0

REPORTABLE DISEASES

PSITTACOSIS	4 cases	.
CONTAGIOUS ECTHYMA		1 case
SCRAPIE		1 case

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